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A TREATISE
ON THE
PHYSICAL EDUCATION
OF
CHILDREN.

GEORGE HARTWIG, M.D.



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PREFACE.

PHYSICAL EDUCATION is a subject of such general interest, that a treatise embracing in a narrow compass its fundamental laws, and clearly pointing out the lamentable consequences of their neglect, will, it is hoped, not be found undeserving of the approbation or indulgence of the public.

Parents cannot be sufficiently reminded that Nature has done all to make their children healthy and happy, and that every departure from her ways, invariably leads to an opposite result.

GEORGE HARTWIG.

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TREATISE ON PHYSICAL EDUCATION.

CHAPTER I.

AIR.

WHEN we hear of a ship striking against a rock and burying hundreds of unfortunate emigrants in a watery grave, or of the horrors of a field of battle strewn with thousands of the slain and wounded, then shipwreck and war appear to our affrighted imagination as the chief scourges of humanity ; and yet, the loss of life they occasion is trifling when compared with that which results from the influence of a polluted atmosphere. For, those evils, however dreadful, exert their fury only at rare intervals, or on a comparatively narrow scene, while the numberless diseases engendered by a vitiated air are uninterruptedly active in shortening the existence of millions.

To convince our readers, we need only refer to the Reports of the Registrar-General. While, in the rural districts of England, the mean duration of life is 55 years, it falls to 38 in towns; and in the cities themselves, mortality universally increases in the same proportion as the population is more closely crowded in narrow, ill-drained, and ill-ventilated streets and alleys. The greater prevalence of intemperance, misery, and vice, wherever man congregates in larger numbers, may in some measure contribute to this melancholy result; but its chief cause is undoubtedly to be sought for in the weakening influence of impure air. For, not in towns alone, but wherever vegetable and animal effluvia taint the stagnant atmosphere—in low and marshy grounds, or in deep vallies impervious to the sun and secluded from the purifying breeze—we can trace their baneful effects in the progress of disease and death. Nor can we wonder at the air we breathe having so great an influence upon our health, when we consider that it is the first necessity of our life, and that fifteen to twenty times in a minute, we are instinctively obliged

to inhale a fresh supply, which, penetrating through the thin coats of the pulmonary cells, instantly mixes with the blood. Thus, wherever the air is vitiated, noxious particles are perpetually absorbed by the economy and corrupting the fountains of life! ¶

Rousseau, "the wild self-torturing sophist," is at least perfectly in the right when he remarks that man was not made to live crowded in a narrow space with a number of his fellow-creatures. The quantity of effluvia which a single individual daily exhales is almost incredible. Physiology teaches us that, on an average, we lose eighteen grains every minute by expiration and imperceptible transpiration—eleven through the skin, and seven by the lungs. This amounts to no less than three pounds and a half a day, consisting of aqueous vapours saturated with effete organic particles, which rapidly putrify, and when breathed over and over again, necessarily become as detrimental to health as corrupted food can possibly be. Were the noxious atoms that hover about in an over-crowded, ill-ventilated school-room or dormitory, to be visibly

exposed to our gaze, we should indeed be astonished at their numbers. Their mephitic smell sufficiently announces their rapid decomposition. They settle on the walls, in the bedding, in the curtains, which thus become fresh sources of infection. How can children, passing their lives in an atmosphere like this, be otherwise than pale and languid, without spirits and energy? It is not merely in the lazar-house that death shakes his triumphant dart as he flies from couch to couch ; here also a sure but slow poison is gradually undermining the constitution of his victims, and paving the way for his approach.

How different is the appearance of children that breathe a pure unadulterated air in the open country or on the bracing sea-side. Their ruddy complexions, lively spirits, and vigorous appetite, all bear witness to the salutary influence of the atmosphere they live in.

Hence we see how highly important it is that parents should be deeply impressed with this great physiological truth, that *the quick-silver does not more surely rise and fall in the*

thermometer from heat or cold, than our health flourishes or declines according to the air we habitually breathe, and that by exposing their children to the influence of a stagnant and corrupted atmosphere, they are neglecting the first and fundamental law of all physical education.

The diet of a child may be ever so well attended to, he may be supplied with the best food, and yet he will fall a certain prey to disease, if allowed to grow up in ill-ventilated apartments, or in an unwholesome neighbourhood. Let us also remember that an impure air, although its pernicious effects are felt at every time of life, is doubly dangerous at a tender age, as it not only weakens the constitution, and thus becomes one of the chief causes of scrofula and rickets, but also renders the debilitated frame less able to resist the attacks of eruptive and contagious maladies, such as measles, scarlatina, and hooping-cough. Thus we cannot be too attentive to the sanatory condition of the bed-chamber, nursery, and school-room, in which our children spend so large a proportion of their lives.

Unfortunately it is a very common error to suppose that a small bed-room suffices for small children, and that two or three of them may safely sleep in an apartment which would hardly be deemed suitable for a single grown-up person. But if we take into consideration that, proportionably to their size, they transpire more than adults, and also breathe more frequently, we shall find that, during the course of the night, they vitiate a very considerable quantity of air, and that a sufficiently large and lofty bed-room is absolutely necessary for their health. Thus, when several children are obliged to sleep together or with their nurse, it becomes doubly imperative to correct, as far as possible, any deficiency of space by a good system of ventilation. Plates of tin or zinc, pierced with innumerable fine orifices, and opportunely fixed in the walls or in the window frames, are very useful in procuring a constant change of air, without the inconvenience and dangers of a draught: a large aperture may also be made in the upper pannel of the door. In winter a good brisk fire serves at the same time as an excellent ventilator, for the air which

escapes through the chimney must necessarily be replaced from without. But a smoky chimney loads the air with poisonous exhalations, and is extremely detrimental to health. By admitting more air to feed the fire, which is easily effected by the simple means suggested above, this evil may in many cases be corrected. In the day-time the windows should be thrown open as soon as the children leave the room, and the bedding exposed for several hours to a current of air, so as to carry off the miasms with which it has been impregnated during the night. We need hardly remark that the bed-linen should be frequently changed, and that dirty cloths must never be kept in the sleeping-room, as they constantly exhale corrupt animal effluvia and render the air impure. Bed-curtains are decidedly unhealthy; they form a close atmosphere round the sleeper, and condense his exhalations in his immediate neighbourhood, thus forcing him to breathe them over and over again. Sleeping without curtains, although it may seem less comfortable, is in reality much more salutary.

Bed-rooms in the upper story are generally

the healthiest; for, in towns particularly, the atmosphere improves in purity and dryness the higher we ascend. The air is never good in dark chambers; thus all rooms much frequented by children, should have a southerly or westerly aspect, allowing the warm sun-beam freely to enter. Damp walls are highly injurious, as the evaporation of their unwholesome moisture produces an atmosphere similar to that of a cellar. The windows of the nursery or school-room should be thrown open every morning before the children come into it; and in warm weather, they of course, may remain so the whole day. Cooking in the nursery, or hanging up linen to dry before the fire, is extremely pernicious. When the children dine in the nursery, the room must be well-aired immediately after.

In every school-room, large apertures with flaps, so as to be able to close or open them at pleasure, should be made immediately under the ceiling, and if possible on the opposite sides. By this means a purifying current of air may constantly be admitted. The proper ventilation of schools is indeed, so highly im-

portant to the public welfare, that in this, as well as in many other respects, they should be under the strict control of government. All rooms much occupied by children ought to be white-washed once a year. As the air we expire, along with that which is laden with the products of our transpiration, *ascends* in consequence of its being heated, and consequently dilated in the lungs, or by the contact of the skin, and then again *descends* as it cools, many noxious effluvia settle on the ceiling and walls, and, if allowed to accumulate, pollute the atmosphere. Thus every one must have remarked the disagreeable smell of apartments that have not been white-washed or papered for some time, even though the windows are frequently opened.

Our utmost care and attention to purify the air of our apartments will, however, lose much of its value, if the sewerage of our house is defective, or if it is situated in an unhealthy neighbourhood; for here the enemy we are seeking to banish, is constantly entering from without. The situation of our abode is indeed of paramount importance to the welfare of

our children. If it is placed on a low and marshy ground, in a narrow, crowded, cheerless, sunless street, among high houses, barring out light and air, or environed by factories and workshops which are constantly emitting clouds of unwholesome steams and vapours, we may rest assured that their sallow looks and drooping health will soon betray the influence of the poison that lurks in the foul air they breathe; and that ailment after ailment will assail them. How different! if we are fortunate or wise enough to select a higher or more open situation for our residence, where the buildings are thinly scattered among fields and gardens, and an untainted air circulates freely on all sides. Here, merry looks and active movements, give proof of health and spirits! Here, even original weakness gathers strength!

CHAPTER II.

EXERCISE.

WHAT a contrast between a child that has plenty of play and exercise in the open air, and one that is continually kept within doors! The first all life and energy, the second all languor and dejection; the one as Nature intended it to be, the other a warning example of the violation of her laws!

How much less of disease and consequent misery would there be amongst us, if we were all thoroughly persuaded of the necessity of exercise! How many valetudinarians might still conquer health and banish most of their ailments, merely by persevering in taking long and daily walks in spite of wind and weather! So bounteous is Nature in assisting us, if we will but assist ourselves!

The salutary effects of exercise extend over the fluids and the solids, and strengthen both

the body and the mind. It causes the blood to flow more freely and equally through all its channels, augments the vigour of the heart, and expands the lungs. It stimulates the secretions, and allows no impure and worn-out humours to stagnate in the veins. It increases the appetite, and promotes the formation of a rich and well-mixed blood, affording an adequate nutrition to the robust and active frame. From this harmony of the bodily functions spring forth delightful sensations of alacrity and health ; the tone of our mind is elevated—we look on men and things with an unjaundiced eye ; and thus our corporeal well-being contributes to our moral and intellectual improvement.

The consequences of neglected exercise are necessarily the very inverse of this pleasing picture. The heart and respiratory organs being but rarely stimulated to greater activity, their energies remain undeveloped, and they are thus rendered incapable of sustaining a vigorous circulation. Hence children condemned to a sedentary life, perpetually complain of cold hands and feet, and lose their

breath upon the least exertion. Their lungs remain small, and they consequently grow up narrow-chested and predisposed to consumption. The blood, flowing but lazily through their veins, and the secreting organs partaking of the general inactivity, their humours become vitiated, and a deplorable train of scrofulous and ricketty affections makes its appearance. Their appetite is weak, or, when strong, it is merely a diseased craving, and bears no good fruit, as is fully testified by the softness of their flesh, their inability to bear fatigue, and the frequent disturbances of their digestive functions. Their corporal debility weighs heavily on their spirits, sours their temper, and makes them fretful and discontented at an age proverbially cheerful and light-hearted. In a word, children to whom the exercise which Nature absolutely requires for their healthy development is denied, must inevitably grow up in a weak and miserable condition, and sorrily prepared for the battle and storms, as well as for the active duties and enjoyments of life !

Having, as we hope, sufficiently impressed this fundamental truth upon the reader's mind,

we will now proceed to examine how exercise is to be regulated during the progress of infancy and childhood.

In the earliest period of life, the bones being comparatively soft and pliable, and the ligaments and muscles extremely weak and delicate, great attention is necessary, to prevent curvature and deformity. Most infants do not acquire sufficient strength to maintain their back in an upright position before the beginning of the fifth month, so that all attempts to make them sit unsupported at an earlier period are necessarily premature and dangerous. Thus they must always be carried about in a reclining position, and when they begin to make efforts to raise themselves, their back and head must be properly supported by the nurse. If, when sitting, an infant lets its head droop like a flower too heavy for its stem, it is a sure sign that its back is still too weak for the exertion, and its position must be immediately changed. All rough handling of an infant, such as jolting or tossing it up and down, must be strictly forbidden, as it is completely at variance with its delicate organiza-

tion. Violent rocking in a cradle is particularly injurious; it causes a strong draught, which may become dangerous, especially in illnesses of the respiratory organs. The rapid swinging of the body, and consequently of the eyes from one side to another, produces giddiness and sickness; and the repeated shocks of the cradle occasion as many concussions of the nervous system, which, considering its delicacy and weakness, soon give rise to extreme fatigue and exhaustion.

In virtue of the fundamental law, that Nature can never be forced with impunity, a child must not be made to stand or walk before he has the necessary strength, which is rarely the case before the tenth or eleventh month.

The best mode of teaching a child to walk early, is to develop his strength from the very beginning, by carrying him into the open air whenever the weather allows, and following a judicious diet and regimen. Then his muscles, bones, and ligaments will certainly not be backward in acquiring the degree of firmness that is requisite to bear the weight of

the body, nor will there be any danger of his legs being unequal to the task, when, after having gradually *taught himself* to walk, by moving his limbs while lying on his back, crawling, raising himself upon his feet by the aid of a chair, and standing alone, he at length ventures to run unassisted into his mother's arms. All mechanical contrivances for teaching a child to walk before he has the necessary strength, are not only perfectly useless, but have also a very mischievous tendency, as by this means he is subjected to a greater fatigue than his weakness is able to bear; and the legs and spine giving way to the weight of the body, easily become distorted and deformed. When a child falls during his first trials, he must not be frightened by loud screaming, which would infallibly deter him from making new attempts for some time after. Nor should he be lifted up abruptly by one arm, as this rough treatment might dislocate the limb, or at any rate weaken it, and even have an injurious effect on the spine. When walking, care must also be taken to give him alternately the right and the left hand.

As time advances and the child becomes more and more independent of support, his constant activity and impatience, when obliged to sit still even for a short time, plainly shew the intentions of Nature. How barbarous and absurd to act in opposition to her will, and force children to sit from morning till night over lessons which possibly may never be of any use to them, while their health is neglected and their constitutions are ruined by the confinement to which they are subjected! Regular schooling ought never to be thought of before the end of the seventh year; and during the later period of childhood sufficient time should always be allowed for plenty of play and exercise in the open air. Without this, all learning will be of no avail, for the unfettered development of the body is the first requisite for a healthy constitution of the mind.

But open-air exercise, like most other beneficial influences, may become detrimental, if improperly used or carried to excess. Thus, many a child has fallen a victim to pneumonia, bronchitis, or croup, from having run or walked against a piercing easterly wind. Long walks

or violent play, producing over-fatigue, have not seldom occasioned inflammation of the hip-joint, and been the first cause of incurable lameness. Drinking cold water when heated with play,* or sitting down upon the damp ground, or on a stone, has done an irretrievable injury to others. The younger and more delicate the child, the more necessary of course it is to have regard to the state of the weather. Infants born in the latter part of Autumn can hardly be taken out safely before the return of Spring; and if the precautions recommended in the preceding chapter are properly observed, and their apartments large and airy, the evil effects of confinement within doors may in a great measure be prevented. As soon, however, as the weather becomes mild, dry, and serene, they must be carried into the open air without further delay; and, ever after, this salutary practice is regularly to be continued, unless when the weather is very rainy and unpropitious.

In fine weather infants and young children should always spend the greater part of the day out of doors; and as they grow up, they

must be gradually accustomed to brave the vicissitudes of a changeable climate, which will be found the only means of invigorating their constitution and preserving them from frequent colds and coughs. Care must however be taken never to let them remain out after sunset; and it would be very injudicious to expose them without necessity to a biting wind or a very damp, foggy, and cold atmosphere. Should they get wet, their clothes must be changed as soon as they return home.

It is essential that the most healthy locality should be selected for their exercise. Thus, children living in large cities must be conducted as frequently as possible into the green fields, or at least into large and open spaces, parks, and gardens, where the ground is dry and the air circulates freely. It will be an inestimable advantage to them if they are enabled to spend the summer on the sea-coast, inhaling the soft breeze and amusing themselves for hours together on a beach, warmed and enlivened by the sun-beam.

No mode of exercise can possibly be better for children than play. Being at full liberty

to move about as they please, and to use their limbs as instinct teaches them, every muscle of their body is alternately brought into action; and at the same time the mind kept in a constant state of pleasing excitement. Gymnastics are excellent for the cure of deformity and local weakness, and do good in all cases, when used in moderation and added to play, but can never become its substitute. It is quite an error to suppose that the evil consequences of sitting the greater part of the day in a confined school-room can be obviated by a course of gymnastics. They fatigue much sooner than play, and may even become dangerous under the guidance of an ignorant or imprudent teacher. Besides, they are frequently practised within doors, or in a confined court. In all schools where the children are not daily taken out to play in the open air for a couple of hours—where ten minutes recreation are not allowed them after every lesson, and they are obliged to sit longer than six, or at most seven hours, during the course of the day—their health is certainly not well attended to, however pro-

minently gymnastics may figure in the prospectus.

Dancing is as useful for boys as girls. To sit or to walk with a bent back and stooping shoulders, is not only ungraceful, but unhealthy, as it impedes respiration, prevents the free circulation of the blood, and hinders digestion, by pressing upon the intestinal organs. An art which improves the bearing of the body, and counteracts the evil effects of too much sitting, should be taught and assiduously practised in every school.

Fencing strengthens the arms, throws out the chest, and teaches us at the same time vigilance of eye and promptitude of action.

By swimming we not only fortify the muscles of the breast and arms, but the skin also becomes hardened against changes of temperature ; it may also be the future means of saving the life of a fellow-creature or our own. Riding on a donkey or poney is particularly salutary for delicate children, as it affords them exercise and change of air without much fatigue. A taste for gardening should be by all means encouraged. Planting, raking, and

digging, not only afford good exercise, but also serve to direct the child's attention to Nature, sowing in his young mind the humanizing love of flowers and trees, and teaching him to admire the Maker in the magnificent variety of his works.

CHAPTER III.

CLEANLINESS.—BATHING.—CLOTHING.

THE functions of the skin are manifold, and of a highly important nature. It is the chief seat of the sense of touch, and as such its tissue is interwoven with numberless sensitive nerves, which serve to communicate to the brain the various impressions resulting from the contact with external objects. It is also one of the chief organs for cleansing the blood, as it constantly exhales a considerable quantity of aqueous vapours and effete animal particles. This purifying process is carried on by a vast number of perspiratory pores, consisting of microscopical spirally-wound channels or tubes, with minute openings, and terminating inwardly in blind or closed follicles; while other small cavities or sacks, universally spread over the skin, secrete through their narrow apertures an oily fluid, which serves to lubricate

its surface. The skin also possesses the property of absorbing both liquids and gases. Thus it is a well-known fact that many medical substances have the same effect when rubbed into it, as if they had been introduced into the stomach, and the absorption of gaseous fluids through its surface has been fully ascertained by the experiments of physiologists. If, besides this great variety of functions, we consider the extent of the skin, which in a middle-sized adult covers no less a space than fifteen square feet, we must naturally come to the conclusion, that to maintain its activity constantly unimpaired, and strengthen its tissue—by cleanliness, bathing, and appropriate clothing—is one of the great essentials of health, and consequently one of the chief objects of a rational physical education. Whenever cleanliness is neglected, the oily fluid accumulates and closes along with the residua of perspiration a great number of the pores, so that many noxious particles, which would otherwise have been removed, remain in the economy and vitiate the blood. Nor must we forget, that in consequence of the extreme

activity of vegetation in the earliest period of existence, and of the warmer clothing which infants require, their transpiration is more active than that of adults; so that for this reason the strictest attention to cleanliness is even more imperative at this age than at any other. We may also add that its neglect is attended with greater danger in the same proportion as their delicate frame is more easily disordered by all unhealthy influences.

“Cleanliness,” says Hufeland, “is the very life of infants; and the better it is attended to, the more their health prospers. With it, they will grow up strong and lively upon a moderate supply of food: without it, they will become pale and emaciated, although their aliments are ever so nourishing and abundant. This is the reason why so many children pine and droop. Ignorant people say they are the victims of witchcraft, but the real spell under which they labour, and which finally destroys them, is uncleanness.”

Hence the health of young infants requires that they should be washed all over or bathed twice a day, while at a later period one daily

ablution will suffice. We are far from advocating the Spartan method of plunging newborn children into a gelid stream, for such violent treatment is repugnant to Nature; but at the same time we cannot sufficiently recommend the early use of moderately-cold water, since a better means for strengthening and regulating the functions of the skin does not exist.

Thus, even during the first days of existence, the warmth of the water for washing an infant in the morning, ought not to exceed 80° or 85° , and this temperature should be diminished more or less rapidly, according to the season or constitution of the infant, until finally, after two or three months, cold water may be used. The washing and drying must be done expeditiously, and care be taken not to expose the child to a draught or a cold temperature of the air while it is performing. Well-aired clothes must be put on immediately after. When these precautions are properly observed, there cannot possibly be anything hazardous in washing infants with cold water, and they will invariably evince by an increase of liveli-

ness and good humour, the agreeable sensations it calls forth.

When an infant has had an excretion from the bowels or bladder, the nates and groins should always be washed with cold water, and well dried immediately after, but without rubbing the part. The frequent application of cold water is the best means to prevent the excoriations which so readily take place at the ears, neck, arm-pits, and groins, particularly of gross children; whereas warm water relaxes the skin, and renders it more liable to this affection. When a tepid bath is used, its warmth should not exceed 90° , nor is it advisable to let the child remain in it longer than five or ten minutes, as with the aid of gentle rubbing this will suffice to remove every impurity that may have settled on the skin.

At a more advanced period of childhood, besides regularly washing the whole body, momentary plunging into a bath filled with cold water, or bathing in a river, or, still better, in the sea, will be found extremely conducive to health. Sea-bathing not only

fortifies the skin, but the whole constitution, promotes a more vigorous circulation of the blood, renders the secretions more active, improves nutrition, and strengthens the nerves. But its good effects entirely depend upon the manner in which it is used; for bathing too frequently, or at an improper time, or remaining too long in the water, or neglecting the means of securing a proper reaction, may be productive of very serious consequences.

Children should never be washed or bathed on a full stomach; and when they are very much frightened by immersion in cold water, and repeated trials are found unavailing to accustom them to the shock, it will be advisable to desist, and simply sponge or wash them in a tub.

A frequent change of linen is essential to the infant's health; it ought never to have on the same dress twenty-four hours consecutively; and unless this is properly attended to, washing will, in a great measure, fail in its object. Clothes saturated with the products of transpiration fill the air in immediate contact with the skin with noxious effluvia, the absorption

of which necessarily causes the blood to be corrupted, and renders the child uncomfortable and feverish by the disagreeable sensations it calls forth. It is almost superfluous to remark that all soiled or wetted napkins must immediately be removed, as soon as ever an excretion has taken place.

The temperature to which the skin is habitually exposed is no less important to health than cleanliness. If not kept sufficiently warm, its tissue contracts, the vital fluid forsakes the capillary vessels, and transpiration is consequently checked. At the same time, its nutrition suffers from this inadequate supply of blood, and the natural consequence is, functional and organic debility, the effects of which must necessarily be felt throughout the whole economy. Thus the *prolonged* action of cold upon the skin has very different effects from those of its *momentary* application, as in washing with cold water. In the latter case, it provokes a speedy reaction, which raises the vitality of the skin; in the former it gradually forces life to abandon its tissue. We must also remember that children, and

particularly young infants, are not capable of generating so much animal heat as grown-up individuals, and consequently less able to withstand the effects of a low temperature. The greater care should therefore be taken to protect them against the inclemencies of a cold and variable climate by a sufficiency of clothing. The absurd custom of suffering young children to walk about in all weathers with short stockings, bare knees, thin drawers, short frocks, and uncovered necks and arms, has been the first cause of many a consumption, croup, and early death, and can in no case be of advantage,—for weakening and impeding the functions of an important organ is surely not the proper way to harden the constitution.

But if an insufficiency of warmth is productive of evil consequences, its excess is no less injurious, so that in this respect, as in all others, we cannot enough recommend the *golden mean*, which neither allows a child to stand shivering from cold, nor to perspire profusely under a heap of unnecessary clothing. Keeping the skin too warm renders it exces-

sively irritable, and liable to catch cold from the slightest change of temperature. The relaxation of its tissue coinciding with an increased flow of blood to the part, provokes a copious perspiration, and thus impoverishes the system. For transpiration is useful and necessary as long only as it removes impurities from the circulation ; but, when carried beyond this point, then a quantity of salts and plastic particles escape along with the perspired fluid, which were destined for the nutrition of the body, and whose constant loss cannot be otherwise than debilitating. The nerves, also, are weakened, both by the waste of humours and the continual stimulation of warmth. Nor can, under such circumstances, the appetite remain good, for the body being habitually exposed to a temperature similar to that of a sultry climate, is not called upon to generate a greater quantity of animal warmth, and consequently less food is required. Thus, universal languor, and a retarding of life's healthful current, is the result. It is true that weak and delicate children naturally suffer more from cold than those who enjoy

the precious boon of a vigorous health ; but the best way to give them warmth is certainly not to pile additional coverings upon them while they repose in bed, or to wrap them up in furs and pelisses as soon as the thermometer falls, but rather to strengthen them as much as possible by exercise, fresh air, cold washing, and a judicious diet. Their frames being by these means invigorated, and the circulation of their blood rendered more active, they will themselves be able to produce a greater quantity of warmth, and become more and more independent of all superfluous clothing.

Covering the head of infants with warm caps is attended with many evil consequences, particularly while teething ; for the vital activity of the brain being at that time very great, any stimulus which still further tends to augment the determination of blood to the part, may be the cause of convulsions or hydrocephalus. To keep the head cool and the feet warm, was the first maxim of the illustrious Boerhaave. In our cold and variable climate, cotton shirting is preferable to linen, as it is a bad or slow conductor of heat,

and consequently affords the skin a better protection against sudden changes of temperature. All weak and delicate children should wear a light flannel next the skin, except during the first month, when it is too irritating, and must be worn over the linen Flannel being a slow conductor of heat, and of a loose texture, allows the transpiration to escape in a gaseous form; linen, from its being a rapid conductor of caloric and of a closer tissue, easily causes its condensation.

The transpiration of our body is the great means which Nature employs to preserve the equality of its temperature. All evaporation produces cold, for a liquid body, on assuming the gaseous form, absorbs a large quantity of caloric. Thus, the more free our transpiration, the better are we enabled to resist any excess of external or internal heat; and this explains how wool and cotton, although they keep the skin warmer than linen, are at the same time a more agreeable wear in summer, and more commonly used in hot climates.

Wool and cotton retain animal effluvia and

contagious miasmata much more tenaciously than linen, and therefore require a frequent change. It is a good maxim to put on summer clothes late, and resume winter clothing at an early period, as the vicissitudes of climate are greatest in Spring and Autumn.

The use of feather beds is extremely injurious to health, for feathers being very bad or slow conductors of heat, keep the body uncommonly warm, provoke a copious perspiration, and thus become saturated with effluvia, which they are, besides, extremely tenacious in retaining. Their softness, also, offering no resistance to the weight of the body, allows it to repose in crooked positions, which may cause, or at any rate promote, the growth of deformity. A light feather coverlet may be used in cold weather for very young infants; but after the first month, a double woollen blanket and a counterpane will be sufficient. The head should repose on a horse-hair pillow.

Over-heated rooms are very pernicious. Children should always remain at some distance from the fire, and the warmth of the

apartment ought never to exceed 66°. The ordinary cause of chilblains is, that children, coming with half-frozen hands and feet into the room, immediately warm them before the fire. The excessive change of temperature, from icy coldness to burning heat, naturally produces an intense irritation, inflammation, and ultimate weakness of the part. Warm worsted stockings and thick-soled shoes or boots, must be worn, and due exercise taken. These are the best means for preventing this disagreeable affection.

All tight clothing, besides preventing freedom of movement, is injurious to health, as, by pressing on the veins, it causes a stagnation of the blood, and thus gives rise to congestion and manifold disturbances. If the pressure lasts but a short time, its evil consequences may soon disappear; but if it is habitual, the parts in which a free circulation of the blood is prevented, cannot be adequately nourished, and their weakness must inevitably ensue. The evils resulting from tight clothing, are great at all times, but

particularly so during childhood, when the body, expanding on all sides, requires the greatest freedom of circulation, and being of a softer texture, offers less resistance to pressure. It is quite impossible that an organ can ever attain its natural development, and grow in the same proportion as other parts, while the compression of a tight ligament or dress reduces even the limits of its actual size, and the necessary consequence is disharmony and illness. Away, then, with all garments and bands that hinder the movements of children, and prevent the free enjoyment of exercise, without which they cannot grow up healthy and strong. No narrow shoes! they lay the foundation of excruciating corns, cause the nails to grow into the flesh, and make play, that great source of delight, a torment. No tight garters! the blood stagnates below the ligature, and causes permanent dilatations of the veins, which are always troublesome, and may become dangerous. No narrow hats and suffocating neckcloths! they provoke headache, bleeding from the nose, and giddiness. But all the evils, entailed upon

the body by the pressure of shoes, garters, hats, sleeves, and neckcloths, are trifling, when compared with those that follow from the absurd custom of wearing tightly-laced stays or waistcoats; for, by their use, the most important vital functions—respiration, circulation, and digestion—are impeded in their operations from morn till night. Nature made the cavity of the thorax or chest to grow gradually wider as it descends towards the waist; this ingenious contrivance strives to effect the contrary, and prevents the dilatation of the lungs in the very part where they were intended to have the greatest latitude of expansion. The functions of the abdominal organs are equally disturbed, for the stomach and liver being compressed, the alternate contractions and expansions of the former, by which the aliments are more intimately mixed with the gastric juice, must necessarily be hindered; nor can the bile, which plays so important a part in the digestive process, be properly secreted by the latter. Surely vanity never led her votaries into a greater error than when she persuaded them

that an unnatural slenderness of waist is essentially beautiful.

The Greeks, whom we all acknowledge to have ~~had~~ taste, were not of this opinion ; for we see no indications of it in the forms of the Venuses and Dianas which the chisel of antiquity has left to the admiration of succeeding ages.

CHAPTER IV.

DIET OF INFANCY AND CHILDHOOD.

THE most suitable aliment for infants is, undoubtedly, mother's milk, since bounteous Nature, who always adopts the best means to accomplish her ends, has specially formed it for that purpose. We cannot possibly improve upon the wisdom of her provisions, and may rest assured that the better we learn to understand, and the more carefully we conform to them, the greater will be our success in the rearing of our children.

Milk alone, without any other food, suffices for the preservation of life, as it contains all the ingredients that are necessary for the complete restoration of our organs.

In its composition we find united, *casein or cheese*, which the digestive process converts into the albumen and fibrin that form the substance of our muscles, nerves, and visceral organs ;

salts, such as phosphate of lime, which serves to raise the solid structure of our bones ; *sugar and butter*, that furnish the carbon, whose combustion, by means of the respiratory process, is the source of animal warmth ; and finally, a sufficient quantity of *water*, the universal diluent, to render all additional beverage unnecessary. Besides, it is easy of digestion, and neither excites nor heats the body.

Such being the incomparable qualities of milk, it is evident, that when a mother is incapable of suckling her infant—and fortunately few parents are really unable to nurse their own children—she cannot possibly do better than intrust it to a 'wet-nurse, whose choice must always be considered as a matter of first-rate importance, as she not merely provides the infant with temporary nourishment, but may also, by communicating to it the germ of diseases, or no less dangerous passions, extend her influence over its whole future life.

A brief enumeration of the principal qualities a good wet-nurse should possess, will shew the difficulty of a proper selection, and how much

it is the duty of a mother to take every precaution before she intrusts her infant to a stranger. As to her physical condition, she must, of course, be of a robust and healthy constitution, free from all hereditary taint and complaint, a question on which medical advice should always be taken. A young nurse, twenty to twenty-six years old, is preferable. The date of her confinement should not materially differ from that of the parent—two or three months at the utmost—for the milk is found to vary in its composition in course of time, adapting itself thus by an admirable provision of Nature to the necessities of progressive development. In the beginning it contains more water and saccharine matter; at a later period, more butter and casein; and while gradually increasing in nutritious power, becomes at the same time less digestible. Hence the milk of a nurse who has been confined six or eight months previously, is apt to disagree with a new-born infant; and if still older, as it then proceeds from a constitution gradually impoverished by the continual drain upon its vital

fluids, it progressively loses its nutritious qualities; and the infant, being ill-fed, is liable to become ricketty and scrofulous. The nurse should also have a constitution and habit of body somewhat resembling that of the mother.

A good disposition is almost as essential as perfect bodily health, for the affections of the mind have a great influence on the qualities of the milk. A paroxysm of rage may suddenly convert it into a deadly poison, as is proved by many instances of infants having been seized with convulsions, in consequence of sucking while their nurse was under the influence of some violent excitement; and if she is habitually subject to fear, grief, or any other depressing passion, the nursling will soon feel the weakening effects, and pine away. Thus, to judge by contraries, we have every reason to believe that a good and even temper acts as beneficially on the composition of the milk as this fluid is known to be unfavourably altered by an opposite state of the mind. Supposing a nurse endowed with so many rare and valuable qualities, to have been found, the greatest care

must now be taken to preserve this excellent moral and physical condition unimpaired, for in the first dawn of his existence, man is so extremely helpless and weak, that his well-being entirely depends upon that of his nurse; and he has more to suffer from her errors and excesses than she herself who commits them. For this reason, her moral and physical health cannot be too carefully attended to. She must eat her meals at stated hours, never overload her stomach, avoid all sour or flatulent aliments, and be contented with plain, nourishing, and easily-digestible food. She must take plenty of exercise in the open air, and neither indulge in sedentary indolence (particularly if she has been accustomed to an active life), nor fatigue herself by over-exertion. In one word, she must observe all the rules of hygiene, for every fault she commits in her diet and regimen, is sure to have an unfavourable influence on the composition of her milk, and consequently on her nursling's health. It is obvious, that without humouring her too much, and spoiling her by excessive indulgence, she must always be kindly and considerably

treated ; for the consequences of violence, caprice, and ill-temper, fall in fact, through her medium, upon the helpless infant entrusted to her care. In a short time it will become apparent whether she is fit for the task she has undertaken to perform. If, instead of gaining in flesh and strength, the infant falls off, or is continually uneasy, fretful, and troubled with flatulency, colic pains, acidity, and diarrhoea ; although every precaution is taken for preventing these indispositions ; then bad qualities may, with justice, be attributed to her milk ; and it will be necessary to engage another nurse, or else bring up the child by hand. But this manner of rearing is attended with many dangers, and not only requires the greatest attention as to the quality of the food, but also the utmost regularity and cleanliness, so that it should never be attempted except as a matter of absolute necessity. It is evident that the plan of Nature must be closely followed, and the infant's artificial alimentation rendered as similar as possible to that, which according to the progress of its development, it would have received from its parent's breast.

Thus milk should always be made the chief nutriment of infants brought up by hand; but chemical analysis proves to us that there is a great difference between mother's milk and that of the domestic animals, as regards the proportion of their component parts, so that from their general properties they may be divided into two classes, the one abounding in serous and saline parts, which includes asses', mares', and mothers' milk; the other, rich in caseous and butyraceous parts, which are cows', goats', and sheep's.

Thus cow's milk is at first too powerful for the necessities or digestive strength of an infant, and must be mixed with an equal quantity of water, gradually diminishing the proportion of the latter, until after eight or nine months it may be given pure. It is essential that the mixture should be newly prepared every time it is used, by adding lukewarm water to the milk, which must always be as fresh as possible from the cow. If it is in the least soured, it is sure to produce griping pains, flatulency, and diarrhoea.

Sucking-bottles, which should always be

kept perfectly clean, and provided with Darbo's cork-nipple, are preferable to a boat or spoon, as the exertion of sucking promotes the secretion of saliva, which so materially assists digestion. When a boat is used, the child swallows too much at a time, and easily overloads its stomach.

The other kinds of food that may advantageously be given to an infant, in addition to the breast or to cow's milk, and whose gradual introduction will best prepare the transition to more solid aliments, are tops and bottoms ; or barley-biscuits, soaked in boiling water for a few minutes, then strained through a sieve, and mixed with a due proportion of sweetened milk ; or sago, thoroughly boiled and mixed in the same way with milk and sugar. Arrow-root is easily digestible, but when merely mixed with water, it affords but little nutriment, so that it must not be too much relied upon. The food of infants should always be of a sufficiently liquid consistence ; all thick paps are completely indigestible, and sure to give rise to a variety of disorders. While feeding an infant, we must also consider the extreme

smallness of its digestive organs, so, that during the first months of its existence, six or eight table-spoonfuls suffice to fill the entire capacity of its stomach. Giving it a greater quantity at a time, must necessarily have an injurious effect. Over-feeding, an error into which young mothers are so easily led by prejudice and mistaken tenderness, is a very common cause of diseases among children; it weakens their digestive powers, and consequently hinders their nutrition and growth.

Regularity in giving the breast or food is also extremely important, as it allows the stomach time fully to digest its meals, and repair its strength by repose, before it is again called into action. The capacity of an infant's stomach being, as we have seen, very small, while its digestion is rapid, and its want of food, owing to the activity of the vegetative functions, very great, it will at first require to be fed frequently—every two or three hours—but as it grows older, the intervals between its meals must be prolonged, until finally four or five a day will be found sufficient.

As soon as possible infants must be ac-

customed to do without food during the night; for if the rest of the nurse is continually broken, her health, and consequently ~~the~~ the quality of her milk, will necessarily suffer.

Two very important epochs, that may be said to close the first period of infancy—*weaning* and *teething*—now present themselves to our notice. With proper care and good management, many of the dangers which otherwise attend upon the former, may easily be avoided; it is either a revolution or a reform, according to the manner in which it is conducted.

When an infant is all at once deprived of its accustomed food, manifold disturbances must necessarily ensue from so sudden and violent a change in its diet; but if, as the time for weaning approaches, the breast is gradually given less frequently, while the quantity and strength of the spoon-meat is increased in an inverse proportion, then the transition will be almost imperceptible.

Weaning too early and too late should be equally avoided. The younger and more deli-

cate the child, the more easily will it be affected by an alteration in its diet, which, however prudently managed, is always considerable ; and, on the other hand, if it sucks too long, then the nurse's blood becomes impoverished, and thus her milk gradually loses its nutritious qualities at the very time when the wants of the infant are increasing. The best period for weaning is generally about the eighth or ninth month, but a variety of circumstances—teething, or indisposition, or bad weather preventing out-of-door exercise—may render a longer delay advisable. A time should be chosen when the health is particularly good and the weather propitious. Robust children may be weaned early, but such as are weak, delicate, and born of scrofulous and debilitated parents, must continue longer at the breast.

There is a great variety in different individuals as to the commencement and progress of dentition. While some infants are born with teeth in their head, like Richard III., others are obliged to wait sixteen or eighteen months before a single one makes its appear-

ance. But these are extreme cases, and in general the first pair of teeth are cut from the seventh to ninth month, and the last before the completion of the second year. There are twenty milk-teeth in all—ten in each row—and they generally appear in the following order of succession, those of the lower jaw being commonly cut before the corresponding ones in the upper:—First, the two middle fore-teeth; secondly, the two next to them; thirdly, the anterior grinders; fourthly, the eye or canine teeth; and, finally, the posterior grinders. An interval of two or three weeks is generally interposed between each successive pair.

The tooth, being originally inclosed in a capsule, this, as well as the gum, must give way before it can be protruded, which is caused by its enlargement pressing on these parts and absorbing them. But the process of absorption does not take place without pain, which, reacting on the whole economy, and particularly on the nervous system, causes *some* indisposition in by far the majority of cases, and not unfrequently serious illnesses and even death.

It is at such critical periods that the advantages of a rational physical education become very apparent; for, while an infant that has been accustomed to breathe the free air, and has had its constitution strengthened by cleanliness, cold-washing, and a proper attention to diet, will cut its teeth without any difficulty, a child that has been rendered weak and irritable by continually keeping within doors and breathing a corrupted atmosphere, or, being over-fed, is full of ill-concocted humours, will be very much imperilled. But whatever indispositions difficult teething may cause, we must always bear in mind that the chief danger to be apprehended proceeds from irritation and preternatural determination of blood to the head; and early precautions must consequently be taken against the eventual occurrence of cerebral symptoms. Thus, when the organization of the infant is weak and delicate, no means must be neglected to invigorate its constitution and remove the nervous irritability that would otherwise expose it to convulsions. From the fourth or fifth month after its birth, some beef-tea may

be given daily, with sago or arrow-root. But if the child is strong, robust, and of a full habit, then all animal food in addition to that which it receives in its mother's milk must be avoided, and great care be taken to feed it moderately, and abstain from all that is heating or exciting. While the teeth are cutting, particular attention must be paid to keep the bowels open and observe a cool regimen. It is by adopting means like these that the storm may confidently be expected to blow over, without causing any disastrous consequences.

As soon as the anterior grinders have made their appearance, it is a sure sign that the child will be able to digest more solid food, as it is now provided with the necessary instruments for its division. At this time, also, the stomach begins to require something more consistent to work upon, for liquid food does not sufficiently stimulate the activity of its muscular powers, which, like all other functions, can only acquire strength by adequate exercise.

The passage from liquid to solid food must however not be too abrupt; so that in the

beginning, the latter—consisting of some lean, easily digestible mutton or beef, finely chopped or scraped, with a mealy potatoe, or some light rice, sago, or bread pudding—should not be given oftener than once a day. This plan having been pursued for a week or a fortnight, some bread or rusk, soaked in milk, may then be added for breakfast and supper.

We will now suppose infancy to be fully elapsed, and turn our attention to the rules by which diet is to be regulated during the remaining period of childhood. The first thing we must always bear in mind is, that the body, not being as yet fully developed, its digestive organs are comparatively weak and irritable ; so that all food intrinsically difficult of digestion, such as heavy pancakes or meal puddings and dumplings, pastry, sweetmeats, confectionary, fresh bread, duck, goose, pork, salt meat, fat, cheese, butter — particularly when it is melted — hard-boiled eggs, nuts, unripe fruit ; or of too stimulating a nature, such as spiced dishes, rich sauces, is highly improper at this time of life. Some boiled whiting, haddock, or cod, may now and then

be allowed ; but turbot, salmon, mackarel, and fresh-water fish in general, are extremely difficult of digestion. Lobsters, crabs, and shrimps, have hard and close fibres that are not easily dissolved by the gastric secretions, and consequently should never be given to children.

Aliments which contain but little nutriment in proportion to their bulk, such as potatoes, although easily digestible and excellent, when added in moderate quantities to other food, must not be made the habitual and chief sustenance of children. They may be proper for the hardy peasant-boy, who, being the whole day actively employed in the open air, acquires so strong a stomach as to be able to master large quantities of food ; but more delicate children require aliments that, without tasking their digestion in any extraordinary degree, or over-heating them, enrich their blood with a sufficient quantity of plastic particles. A proper mixture of animal and vegetable food is undoubtedly most conducive to health ; and although some enthusiasts imagine that man would be all the better if

he lived exclusively on the productions of the vegetable kingdom, the simple fact that we possess the grinders of the herbivora along with the sharp canine teeth of the carnivorous animals, affords convincing proof that Nature intended us to live on meat as well as on the fruits of the earth. Thus, roast or boiled beef or mutton, chickens, soft-boiled eggs, light puddings, carrots, turnips, cauliflowers, potatoes thoroughly boiled, cabbages in greater moderation, as they easily cause flatulency; sago, tapioca, rice, well-baked and stale bread or biscuit, are all suitable aliments for children. Sugar, used in moderation as a condiment, is wholesome and nutritious, but sweet-meats are highly prejudicial.

A few grains of salt should always be added to the food of children; it is a necessary ingredient of the blood, and a good preventative against worms.

Thoroughly ripe fruits — oranges, grapes, peaches, apricots, strawberries, raspberries, cherries, apples, pears—are excellent, when eaten in moderation, particularly in the season when Providence produces them in abundance,

as by their cooling and slightly acid properties, they correct the tendency to bilious complaints so prevalent in Summer and Autumn. Care must be taken to reject the indigestible skins, seeds, or seed-capsules. Roasted or boiled apples, pears, or cherries, are an excellent supper, with a piece of bread. Oily fruits, such as almonds, nuts, filberts, should never be given to children : melons, chesnuts, dried raisins, are also very objectionable.

Too great a uniformity of diet is not to be recommended, as no kind of food, except eggs and milk, contains all the ingredients that enter into the composition of our body. Many experiments have been made on this subject, and it has been found that birds and quadrupeds fed exclusively on one aliment, although good in itself, and agreeing with them, when given along with other food, gradually lost their strength, and ultimately died.

Regular meals must of course be observed during the whole of childhood. Giving children buttered bread, cakes, or sweetmeats, at every hour of the day, spoils their appetite, and ruins their digestion, by continually dis-

turbing the intervals of rest, which the stomach, like every other organ, requires.

Children must not eat or drink too warm or too cold. Both extremes are injurious, by violently stimulating the nerves of the stomach. A cold draught taken while the body was heated by play or exercise, has been known to destroy the health for life.

It is highly important that the food be well masticated. Large morsels, hastily swallowed, severely task the powers of the stomach, or else they are evacuated, almost unaltered, without having afforded the body any nutriment. When children eat slowly, their food not only gets properly divided, but also more intimately mixed with saliva, a fluid which, as we have already observed, materially assists digestion, from its having the property of dissolving starch, that forms so considerable an ingredient of vegetable food, and taking up a large quantity of atmospheric air, without whose assistance the chemical action of the gastric juice could not be carried on.

Great moderation must of course be observed at all meals, for nothing weakens the

stomach more than overloading it; but the supper of children should be particularly light, and not be taken too shortly before going to bed. If it is in the least heavy and difficult of digestion, it causes an unquiet sleep, which cannot sufficiently repair the waste of the previous day, and consequently the nutrition of the body must suffer.

Rest is conducive to the performance of the digestive process: children should therefore not be allowed to play immediately after dinner, nor hastily to swallow their meals when fatigued or heated with exercise.

Water is the most healthy beverage for children, but in localities where it cannot be procured of a good quality, some light beer will be preferable. Wine is far too stimulating a beverage for children: a small quantity agrees with phlegmatic and scrofulous constitutions, but then it must be considered as a medicine.

Tea and coffee are highly improper at this early age; if weak, they act like warm water, and relax the fibres of the stomach; and if strong, they irritate the nerves and blood-

vessels. Milk is, in general, far preferable both for breakfast and supper, as it dilutes the blood without heating it, and nourishes the system without producing excitement.

CHAPTER V.

SLEEP.

SLEEP, when too much prolonged, has many evil consequences. It retards the circulation of the blood, and produces stagnation in the veins, particularly of the head, which is already predisposed to congestion by the horizontal position in which the body is placed. Hence the brain is generally confused and unable to think clearly after too long an indulgence in tired Nature's sweet restorer. As there is less consumption during sleep, while nutrition proceeds without interruption, excessive repose easily causes a morbid obesity, and produces a superabundance of crude and badly-elaborated humours. The nerves remaining longer inactive than the wants of Nature require, become weak and irritable, and the muscles lose their tone, energy, and power from their protracted relaxation, when they should already be gain-

ing strength by active employment. The skin also is rendered extremely susceptible of catching cold, by remaining so many hours under warm coverings, and superfluous transpiration being favoured by the same cause, this also tends to impoverish the blood by withdrawing nutritious particles from its mixture.

Nor must we forget that our life being but short, and time precious, it is a grievous waste to spend it, not only uselessly, but in a way that is positively detrimental to health and to the higher aims of existence.

These surely are weighty reasons why parents should by all means accustom their children to rise early in the morning; but while seeking to prevent slothful indolence, they must take heed not to fall into the opposite extreme; for at every age the want of necessary sleep causes a considerable exhaustion of vital power, and consequently gives rise to symptoms of general weakness and depression, such as weariness, lassitude, obtuseness of the senses and the mind, paleness, and emaciation. But these evil effects of inadequate

repose must naturally appear much sooner in infancy and childhood, when, owing to the want of energy and excessive irritability of the constitution, much more sleep is required than in adult age. Thus, in the first dawn of their existence, infants are almost constantly asleep, awaking only from time to time to satisfy the demands of hunger; and gradually, as their strength increases, the periods of wakefulness grow longer, and thus by degrees one hour after another is added to the consciousness of life.

As long as children enjoy good health, they are never a moment at rest; and were all those irregular movements which the whim of the moment suggested during the course of the day, to be summed up, many a mile would be found to have been traversed from morn till eve. Their liveliness, deeply interested in trifles light as air, and hurrying from one object to another, as the butterfly speeds from flower to flower, makes them forget fatigue until sleep fairly overpowers them.

But then also they enjoy a long and deep repose, and twelve, eleven, ten, hours—accord-

ing to the difference of age and temperament—will not be too much to repair the consumption of the previous day, and enable their organs to undergo the same exertions. To render their sleep as refreshing as possible, their bed-room should always be darkened and kept free from noise. Their coverings must not be too warm, with due consideration to the season and exigencies of early infancy, whose power of generating heat is small. Cleanliness and purity of air greatly tend to produce calm and refreshing slumbers. On no account must the sleep of children be disturbed; as soon, however, as the wants of Nature have been fully satisfied, and they are fairly awake, they must be made to rise immediately, and by no means allowed to indulge, in a state of indolent somnolency.

Healthy children, or what in most cases is synonymous, children brought up according to the rules of a rational physical education, are, it is true, not so likely to fall into this evil habit as others, for their lively spirits, having been completely refreshed by a sound sleep, prompt them to immediate action as soon as

they awake, and do not allow them to remain passively in bed. But children that are deprived of exercise in the free and open air, or whose ill-managed diet exposes their digestion to continual derangements, which in their turn cause a depression of the nervous system, are in a very different condition. Their slumbers are disturbed and uneasy, and consequently not feeling themselves refreshed in the morning, they are more inclined to rest than to activity. Thus one error in physical education leads to another.

During the first two or three years of existence, some sleep in the middle of the day is necessary, as the delicate frame is not yet able to remain uninterruptedly active from morn till sunset; but at a later period, it should no longer be permitted, as it has the evil effect of keeping children too long awake in the evening, and rendering their sleep less sound during the night.

Children must absolutely be accustomed to go to bed at a regular and early hour; and no supplications and tears should ever induce us to depart from this excellent habit.

Nothing can be worse than to allow children to sit up late in company, at an hour, when they should long ago have been recruiting their strength in their quiet bed-room. The strife between tired nature, longing for repose, and unusual excitement, bidding them surmount their weariness, is painful to behold. Nor must we forget the cakes, sweetmeats, and stimulant beverages, with which, to the great detriment of their stomachs and nerves, the little victims of curiosity and vanity are, on such occasions, but too liberally treated, not to mention the pernicious moral effects of the many compliments which are paid them. It is evident that the frequent repetition of scenes like these cannot be otherwise than injurious to health. While every hour of the night serves to strengthen and renovate the child that lies down as soon as the fatigue brought on by the healthy exertions of the day invites it to repose; here, on the contrary, a long time must necessarily elapse ere the tumult of the nerves subsides, and the body regains that degree of calm and tranquillity, without which its re-production cannot effectually take

place. On the following morning, the evil effects of late hours shew themselves very plainly ; the tired child remains longer in bed, and does not play with its usual liveliness : it has spoilt its stomach and lost its appetite, and generally requires several days before it completely recovers.

Why should children be so soon accustomed to artificial pleasures? Evening parties cannot in the least contribute to their happiness ; freely to ramble about, with joyous play-fellows, is the chief enjoyment at their time of life, and one that may well be envied them by ~~their~~ elders.

CHAPTER VI.

ON THE CAUSES AND PREVENTION OF A SHORT AND WEAK
SIGHT.—SQUINTING.

It would be a great waste of words to point out the manifold miseries and inconveniences of a weak or short sight, and to shew what a source of anxiety and distress the failing powers of the most precious of our senses may become; but it surely is well worth recalling to the memory of parents, that early neglect is the most frequent cause of many infirmities of vision, which once acquired, generally afflict us during the whole of after-life; and that it is very much in their power to secure to their children the invaluable blessing of a strong and perfect eye-sight, merely by taking some few precautions that may seem trifling, but are, in reality, of the highest importance.

We have already, more than once, in the course of this little volume, had occasion to

point out that all parts of our body are mutually dependent on each other ; and that, in virtue of this universal sympathy, the good health of each individual organ acts more or less favourably on the condition of the rest. When, therefore, the general rules of a judicious physical education, by which the strength of the vegetative and animal functions is secured, are accurately followed, the eye must, at the same time, be invigorated. But this highly sensitive organ, which is constantly exposed to a peculiar and powerful stimulus, and, as Addison beautifully remarks, “continues the longest in action without being tired or satiated with its proper enjoyments,” may almost be said to have an independent life of its own, which is liable to be weakened or destroyed by local influences, however healthy the general state of the body may be. For this reason the preservation of the sight requires the observance of particular rules, on which we think it necessary to offer a few remarks.

The action of too strong a light is a frequent cause of weakness of vision, or even of its total destruction, either by falling suddenly on the

eye, or habitually over-stimulating the sight. Thus, a flash of lightning sometimes blinds for life. By looking into the sun, the part of the retina on which its image falls, becomes momentarily paralysed, so that a black spot settles before the eye, and only gradually disappears after having run through all the colours of the rainbow. We all know the disagreeable impression caused by the abrupt passage from darkness into a strongly lighted apartment, or by the reflection of the sun from a white wall, and how much the eye is fatigued after gazing for some time on a dazzling object.

Knowing then the evil consequences which an excess of light is apt to produce, we must, from the very beginning, take every precaution to secure our children against it. Their cradle must not be placed right opposite the window, but in such a way that, on waking, their eye is met by a mild and equal light.

Nor must the candle or night-lamp be allowed to shine upon the face ; for, when the infant is awake, its eye is constantly attracted by the treacherous flame, which, of course,

produces intense stimulation and weakness, and even, when it is asleep, the light still penetrates through the thin veil of its eyelids, and continues to irritate the retina.

At a later period, children must not read or write too much by artificial light, particularly not on paper of a dazzling whiteness. Dark eye-shades afford a very equivocal protection while reading; for here a strongly illuminated white surface strikes one half of the eye, while the other remains in darkness and inaction, so that an inward disharmony is created, which is very trying to the powers of vision.

Children have an evil habit of looking into the fire, which must absolutely be forbidden. Nor is it good for them to pass a great deal of their time in a room with whitewashed walls; as here their eyes do not find the necessary repose, but are continually stimulated by a strong reflection of light. Green or grey tints are the best.

Little girls should not wear veils: the protection they afford the skin is purchased at the expense of the sight; for the continual movements or vibrations of a semi-transparent

tissue before the eye, must necessarily fatigue it very much.

If too strong and glaring a light often becomes a cause of ocular weakness, its deficiency is frequently no less injurious; for when the eye is at work, it requires a certain quantity of light plainly to distinguish the objects on which it fixes its attention; and when this is wanting, its powers must necessarily be very much strained and fatigued. For this reason the habit of reading or writing by twilight is so extremely pernicious, that it is alone sufficient to ruin the strongest eye-sight. We should always remember that a weak light is excellent for the eye as long as it is unoccupied, but becomes insufficient and consequently detrimental whenever the sight is actively employed.

Unfortunately this important rule is nowhere more frequently neglected than in schools, where the lighting of the lamps and candles is often delayed until the strained eyes are absolutely unable to see any longer; not to speak of so many dark class-rooms where, even in the middle of the day, the children

are condemned to learn their lessons in a perpetual twilight.

Short-sightedness, so common among scholars, is frequently the result of much reading by insufficient light. To be able better to distinguish the letters, they are obliged to hold the book close to their eyes, whose formation in consequence gradually adapts itself to the perception of objects that are near, and finally loses the power of distinguishing those that are distant. But even with the best light, it is impossible that children, poring for hours together over their books, particularly when the print is small and indistinct, can ever remain free from this defect. There is positively no other means to prevent it than a proper alternation between study and playing in the open air, where the eye is at liberty to roam over a wide space, and the view entertained with a variety of objects, placed at unequal distances.

Reading immediately after dinner or during meals, is extremely injurious; for the vital spirits, being drawn to the stomach and adjacent organs by the digestive process, every

exertion of the eye must at that time be doubly fatiguing.

A weak and a near sight are generally united; as soon, therefore, as one finds that a child's eyes begin to look weak, or swim in tears, or become painful even when they are but moderately tasked, and are no longer able to distinguish distant objects with the same accuracy as before, no time should be lost to meet the growing evil at once, and allow the fatigued eye-sight the relaxation it requires for its complete recovery. All reading or writing by candle-light must immediately cease, and be allowed only for a short time during the day; all small print must be banished; care taken that the child does not lean forwards over his book, or hold it close to his eyes; and attention paid that these organs are not exposed to any strong reflection of light, when inactive.

Frequent walks among green fields, where the eye may be soothed and refreshed, and at the same time exercised in distinguishing distant objects, will be found very beneficial. Thus, and thus only, can a very dis-

agreeable infirmity be checked in the beginning.

Squinting is generally the consequence of an unequal exertion or tension of the muscles that move the eye-ball. When the eye is frequently diverted from the axe of vision in one particular direction, the muscle, which by its contraction operates this position, gradually acquires a greater power than its relaxed antagonist, and becomes short and strong, while the latter gets distended and weak ; and thus, what at first was but an evil habit, ultimately becomes an organic defect.

Infancy is the time when this infirmity is most easily acquired, and great care must therefore be taken to prevent it from the very beginning. For this purpose, the child must habitually be placed in such a position as to enjoy a full view of the objects that attract its attention ; for, if a light, for instance, falls sideways on the cradle, the eye will naturally be attracted by the flame, and thus assume an oblique direction.

Convergent squinting sometimes arises from a bad habit of holding the playthings too

near the infant's face; while squinting upwards ensues from frequently contemplating objects above and behind the head. Thus, leaning over the back of the child's cradle, and playing with it in this position, is injurious.

Frequently carrying an infant about the room, so as to prevent its eye from gazing too long from one point of vision on any particular object, is a good preservative against squinting.

CHAPTER VII.

THE HYGIENE OF THE TEETH. — THE PREVENTION OF AN
INDISTINCT PRONUNCIATION AND STAMMERING.

ATTENTION to the health of the teeth forms no inconsiderable part of physical education, as childhood is the time for laying the foundation of their strength, or preparing, by neglect, their weakness and premature decay. The evils resulting from bad teeth are manifold and important. They disfigure the most charming countenance, and thus may prove a serious source of unhappiness. They taint the breath, and frequently cause excruciating pain. Their early loss prevents the complete mastication of food, and, rendering digestion more difficult, gradually weakens the nutrition of the body, and thus tends even to shorten life. These surely are weighty reasons why we should take the greatest care to secure to our children the benefit of strong and lasting teeth.

The observance of the general rules of health is, of course, the first essential for keeping them in a good condition ; for, like all other organs, they derive their nutriment from the blood ; and, according to the quality of this vital fluid, thus also will their texture be firm and enduring, or comparatively soft, and subject to the inroads of disease. But besides being dependent on the general state of the body, they are exposed to many immediate and peculiar causes of derangement, which will be better understood after having previously acquired some idea of their structure.

That they are composed of a solid, bony substance, covered externally with a hard and brittle coat of enamel, which protects them against many chemical agents, is generally known, but most of our readers are probably ignorant of the fact that each of their roots is pierced by a small passage or canal, communicating with a larger cavity in the interior of their crowns, and that this hollow is filled with a soft and pulpy mass, in which numerous nervous fibres and minute blood-vessels are

imbedded. In consequence of this peculiarity of structure, the teeth do not serve merely as mechanical agents for dividing the food ; they also possess great sensibility and delicacy of touch, and are able accurately to distinguish the position and most of the physical qualities of the morsel which is brought between their rows. Thus they regulate the movements of mastication ; and although they are assisted in this function by the lips, tongue, and cheeks, yet the chief part undoubtedly belongs to them. They are, in fact, to the mouth what the fingers are to the hand. Now, it is evident that organs endowed with so exquisite a sense of feeling, deserve a much more careful treatment than usually falls to their share. The abrupt and excessive changes of temperature to which they are so frequently exposed by being brought into contact with hot or cold substances, is particularly injurious to them. Not only their enamel becomes easily cracked in consequence, and thus leaves the osseous part or ivory unprotected—their vital powers also are gradually weakened by a frequent repetition of these sudden transitions, and

consequently offer less resistance to the progress of caries and decay. This is one of the reasons why the food of children should always be of a moderate temperature, neither too warm nor too cold. Another very bad habit is that of cracking hard substances, such as fruit-stones, or cutting thread with the teeth, or picking them with pins and other metallic bodies. This is very rough treatment, to say the least of it, and endangers their enamel, which, be it observed, is not reproduced when once destroyed.

The frequent use of substances possessing a chemical action on the ivory of the teeth, such as acids, and thus easily setting them on edge, or even producing an intense pain, leads almost inevitably to their destruction.

Although sugar does not injure sound teeth, it hastens the decay of those that are already attacked. But the chief and most frequent local cause of their early deterioration is undoubtedly the want of keeping them sufficiently clean. When the tartar, a calcareous substance, which the saliva and mucus

continually deposit on their surface, is allowed to accumulate, it irritates and ulcerates the gums, provokes the secretion of a puriform and extremely foetid matter, and gradually forming a thick layer between the flesh and the tooth, loosens the latter in its socket, and finally causes it to drop out. To prevent these evil consequences, a soft tooth-brush and an appropriate powder, such as finely pulverized chalk and camphor, should be made use of from an early age; but all those active substances so frequently recommended by quack dentists, which whiten the teeth at the expense of their enamel, must be cautiously avoided. The assiduous use of the brush not only removes impurities, but serves also to strengthen the gums by friction, so that, becoming more consistent, and forming a firmer enclosure round the teeth, they increase their stability, and prevent the tartar from settling between them.

An irregular growth of the teeth must not be omitted among the causes of their premature decay; for, when they stand too close together projecting forwards or re-

treating backwards, they are, of course, exposed, during mastication, to a very unequal friction and pressure; and this gradually gives rise to the formation of caries and progressive destruction.

Now, it is very much in our power to prevent this evil, merely by not prematurely interfering with the intentions of Nature, and not being over-hasty in extracting the first teeth, whose roots being gradually absorbed, seem destined to serve as guides to the growth of those which are to replace them. Another still more cogent reason why we should endeavour to keep the milk-teeth as long as possible in their places, is, that, while their successors are expanding and growing beneath them, they exert a considerable lateral pressure on the alveolar process, which tends to widen the jaw-bone, and prepare a space large enough for their future reception. Thus, by the early extraction of the milk-teeth, this wise provision of Nature is defeated, and the new teeth being broader than those which they replace, are consequently obliged, for want of room, to deviate from the regular line. The milk-teeth should never be

drawn before they are very loose, or their successors have already made their appearance, either behind or before them.

The physical infirmity of an indistinct pronunciation and stammering, is generally contracted in childhood ; and however difficult and tedious to cure when it has become habitual, may be easily prevented or removed by proper attention being paid to it in the beginning.

Children with irritable nerves, and of a lively disposition, all whose movements are hasty, and in whom emotions of the mind immediately cause an acceleration of the pulse, a change of colour, and trembling of the muscles—whose ideas flow so rapidly, and whose eagerness to express them is so great, that they do not give themselves the necessary time for a distinct utterance—are very liable to faults of speech, which, if neglected, may gradually become a serious evil.

An education that strengthens the nervous system, and lays the foundation of a robust

and healthy constitution, necessarily tends to diminish this predisposition to stammering.

As soon as a child begins to speak indistinctly, he must be made to repeat his imperfect sentences, and to pronounce every syllable plainly and loudly. He must on no account be encouraged in his evil habit, by his attendants catching, as it were, his meaning from his eyes and gestures; they should seem not to understand him—he will then endeavour of his own accord to improve his speech.

Reading loud, slowly, and distinctly, is not only an excellent exercise for the lungs, but also for the organs of speech, and should therefore be daily practised.

The moral infirmity of bashfulness frequently gives occasion to an indistinct utterance and stammering, or at any rate furthers its progress; the shy child scarcely venturing to raise his voice, and jumbling his words together, to escape as speedily as possible from notice. A fault so painful in itself, and which may become so serious an obstacle to success in life, cannot be too soon corrected.

Besides strengthening the nervous system, which is an essential point, a bashful child must be brought as much as possible among people, but without using any compulsion or harsh words, which would only aggravate the evil by increasing the disagreeable impression caused by the presence of strangers.

CHAPTER VIII.

THE INFLUENCE OF MORAL AND INTELLECTUAL EDUCATION
ON BODILY HEALTH.

THE nature of the link by which the soul and body of man are united, is and will always remain to us a mystery, and all speculations on the subject are perfectly useless ; but daily experience teaches us the valuable lesson, that their mutual dependence on each other is very great, and that according as each of them is sound or distempered, it re-acts favourably or unfavourably on the state of the other.

If a weak health sours the temper, and too often prevents the exercise of virtue, a mind in which the passions are allowed to run riot, equally disturbs the equilibrium of the body, and subjects it to a thousand infirmities. All the physical means of health—exercise, pure air, a well-regulated diet—may be properly attended to, and yet they will fail to secure to

our children the benefit of a strong and enduring health, if at the same time we suffer them to grow up under the control of such powerful enemies to their quiet. The influence of the passions is indeed immense. Their infinite gradations, varieties; and shades, from the highest state of excitement to the deepest depression, immediately call forth a corresponding state of the body. Look at an angry child! its heart palpitates violently, its face reddens, its eyes start from their sockets, its blood and nerves are in a tumult. Or, again, view it while the fear of some dreadful apparition strikes its young imagination with terror: its whole body trembles and shakes, as under the influence of ague; a cold perspiration covers its forehead; the blood forsakes its cheeks, its eye is vacant, its breathing difficult and spasmodic. Surely when the heart is frequently agitated by emotions such as these, or when it is an habitual prey to gnawing grief or corroding envy, the storms and disturbances it calls forth in our physical functions, must inevitably undermine the constitution; and, on the other hand, there can be no doubt that

a good moral education, which tends to emancipate our children from the servitude of evil or degrading passions, and teaches them from an early age wisely to govern and direct their minds, is also extremely favourable to their health. It is the moralist's province to point out how this desirable end—more precious for our happiness than all worldly possessions—is to be obtained ; but thus much our subject allows us to remark, that neither *harsh treatment* nor *over-indulgence* are calculated to lead to its acquisition ; and that while they vitiate the mind, they are at the same time decidedly injurious to our physical welfare.

To rule with a rod of iron, not only sows the seeds of dissimulation, hatred, malice, and envy ; it weakens also the springs and elastic energies of the body. Cheerfulness, joy, and affection are as natural to children as singing to the lark or linnet of the grove ; and these delightful feelings were undoubtedly meant by Nature to act as a gentle and salutary stimulus on the growth of the body. Under their benign influence we see harmony pervade the whole of the nervous system ; the blood

circulates freely through all its channels, the secretions are active, and nutrition proceeds undisturbed. But what a lamentable change, if we revert the pleasing picture, and, crushing the affectionate and joyful feelings of our children by harsh severity, introduce grief, sorrow, and depression in their stead ! Then all is disturbance and confusion. The nervous system being kept in a state of unnatural tension, becomes irritable, the circulation loses its energy, the secretions are diminished or stopped, and universal weakness is the consequence. Thus our beneficent Creator evidently intended children to be brought up in joy and harmony, for He made their physical welfare dependent on their happiness.

But a blind indulgence is equally pernicious. "The surest way to make your child miserable," says Rousseau, "is to gratify all his wishes, whims, and caprices ; for his desires, increasing by their indulgence, will inevitably attain a point, when, with the best will you will no longer be able to satisfy them. The child who, in order to obtain, has only to insist, believes himself the master of the uni-

verse ; and when at last one is absolutely forced to refuse him anything, he considers it as an act of rebellion. All reasons given him at an age incapable of reasoning, are in his opinion merely vain pretences ; and, fancying himself treated with injustice, his temper becomes soured, he hates everybody, and, without being thankful for unwearied kindness, is furious at the slightest opposition. How can a child thus devoured by the most irascible passions ever be happy ? He happy !—he is a despot, the vilest of slaves, and at the same time the most miserable of creatures. Weakness and dominion united can produce nought but folly and misery.”

That the waywardness, peevishness, and irritability of temper, which, like a luxuriant harvest of weeds, spring up in a spoilt child's mind, cannot fail to affect his bodily health also, is perfectly obvious. Not a day passes without storms, and every storm makes his nerves more irritable, and still more disturbs the functions of his body. How can his stomach ever be in order ? He is constantly asking and obtaining sweet-meats and cakes

between his meals, and never allows it to have rest. Want of appetite and indigestion are the necessary result, and aggravate his ill-humour.

Nor are examples rare, that fevers and inflammatory diseases of self-willed children have had a fatal termination, merely from their obstinacy in refusing to remain quietly in bed, when rest was absolutely necessary, and follow the diet or take the medicine which alone could have saved them ; and how poignant must not, in such cases, be the reflections of the unfortunate parents, who, having forfeited all authority in the day of health, find it impossible to re-assert it in the hour of illness, and must consequently reproach themselves with being the authors of their bereavement.

If errors in the moral education of children are a frequent source of ill health, the faults that are so often committed in the cultivation of their intellect are no less so. Teachers and instructors too frequently lose sight of the simple fact, that the brain being the organ or

vehicle of the mind, is subject to the same laws as all other organs ; and that, as it is strengthened by adequate exercise, it must necessarily be weakened by over-exertion.

In the same way as the stomach is debilitated by filling it with a superabundance of food, which, however good and healthy in itself, becomes pernicious from its quantity exceeding the powers of digestion, thus also the brain suffers as soon as its attention or its reflecting faculties are tasked beyond a certain measure, and all exertion carried beyond this point, so far from sharpening the wits, serves merely to render them obtuse. But the evil effects of intellectual over-feeding are not confined to the mental faculties alone ; they extend, more or less, over the whole of the nervous system, whose different provinces, as we well know, are all intimately connected. When, therefore, so important an organ as the brain becomes irritable or blunted by the straining of its powers, other organs and functions must necessarily be affected in the same manner, and the whole machine be put out of order. It is thus not the long hours of confinement

in a close and vitiated atmosphere, the want of exercise, the prolonged bending of the body, the straining of the eyes alone, that render too much study*injurious to health: even supposing these evils could be entirely obviated, still the constant fatigue of the brain would suffice to render the nerves weak and irritable. Mental over-exertion is the more to be lamented, as it is a well authenticated fact that a mind, whose moral and intellectual qualities are harmoniously developed, has a most favourable influence on health and longevity. Not merely that being better able to restrain the passions and to judge of what is good or evil, it avoids and casts off the yoke of a great many pernicious influences; it adds a direct weight to the sum of our vital energies. Force of mind wards off the attacks of epidemic disease, and renders us capable of bearing privations and fatigues, under which mere brute strength would have given way. At an advanced age, when uncultivated intellects generally fall into childishness, a well-trained mind, strengthened by the exercise of thought, still takes an interest in the highest pursuits of

humanity, and seems to defy the progress of bodily decay. The acquisition of useful knowledge, the study of science, the contemplation of Nature, truth beaming on the mind and enlarging the intellectual horizon, are not only our noblest sources of enjoyment, they are also a universal cordial, and diffuse an enlivening warmth throughout the whole body.

Thus, an education which, by overworking the brain, robs it of its energy and blunts its finest sensibilities, is not only deplorable for the positive evil it inflicts, but also for the good which it prevents.

All stimulants that may be resorted to for rousing the fatigued powers of the brain, punishments, rewards, or praise, are equally pernicious, for they incite to a continuance of action, when Nature imperatively calls for rest.

A precocious disposition for learning has almost always something morbid about it, and, instead of being gratifying to a parent's vanity, should rather awaken his apprehensions. Such children being generally of a nervous and de-

licate constitution, the first care should be, not to increase their bodily weakness by sedentary study, but to fortify their health by assiduous exercise.

Here the mind is, as it were, in advance of the body; and it is surely a great piece of folly to increase the disproportion, instead of endeavouring to establish a more perfect harmony between the intellectual and physical powers. The consequence is, that the constitution, becoming more and more debilitated, the mind also eventually suffers. How often do we not see that children who were the first at school, are obliged to content themselves with a very inferior position in after-life, and are completely distanced by originally far less gifted competitors? The reason is, that their brain has been weakened by excessive stimulation, and that unprofitable book-learning having engrossed their faculties, they grow up without the energy of will and strength of nerve so necessary for success in life. If, instead of being encouraged to sit from morning till night over their studies, a great part of their time had been spent in healthy bodily exer-

tion, there can be no doubt that the result would have been very different, and that the sanguine hopes built upon their natural liveliness of intellect, would not have been so grievously disappointed.~ * •

CHAPTER IX.

THE ABUSE OF MEDICINES.

AMONG the causes which tend to deteriorate the health and increase the mortality of children, the abuse of medicines is certainly not one of the least.

It is evident that a competent knowledge of the endless varieties and modifications of the diseases to which we are subject, and of the qualities, effects, and doses of the numerous medicines that are employed against them, can only be the fruit of long observation and study; and yet we daily see mothers boldly assuming the responsibility of curing their children of real or imaginary complaints, and not contenting themselves with using mild substances only, but recklessly playing with the sharpest tools. We will not deny that the remedies thus given may not now and then have a good effect, but as prescribing without

sufficient information, is very much like firing in the dark upon an unseen foe, the general consequences may easily be imagined. Thus : by bringing up their children according to the rules of a sound physical education—the true and only means to prevent the frequent occurrence of disorders—parents undoubtedly act upon a safer and more enlightened principle, than by encroaching on the physician's province; for every improper or unnecessary dose of medicine is sure to aggravate disease or create indisposition. A few observations on the remedies, the abuse of which is most commonly attended with evil consequences, will prove the justness of these remarks.

Whenever a child is costive, or shews signs of a disordered digestion, recourse is generally had to opening medicines, which are all of them more or less dangerous auxiliaries, for their habitual use leads to an increasing inactivity of the bowels, and thus augments the evil which they momentarily relieve. This wrong direction having once been taken, the system becomes at last so accustomed to the aid of artificial means, as to be rendered un-

able to act without their assistance ; and the consequence is, that the natural energies of the intestinal organs being weakened by perpetual stimulation, the blood begins to stagnate in their veins ; and thus an early disposition to abdominal plethora is created, which in its turn gives rise to piles, obstruction of the liver, and a host of other complaints. Such being the evil consequences to which the frequent use of purgatives may lead, it is evident that they should be given *only* when absolutely required, and the cure of habitual costiveness rather sought for in the adoption of a better diet and regimen, than by constantly applying to pills and electuaries for assistance.

Diarrhoea is another morbid condition which too often provokes the medical intervention of parents, to the detriment of their children's health ; for how can they know whether it may not be a salutary effort of Nature to relieve the economy of impurities, and to cleanse the humours, when of course its stoppage must be injurious ? Sometimes, also, it proceeds from an inflammatory state of the bowels ;

and then the use of astringents and red wine may even endanger life.

The supposed existence of worms frequently tempts parents to physic their children, and have recourse to violent and dangerous remedies; thus running the risk of making them seriously ill, when exercise in the fresh air and a judicious diet, might have amply sufficed to remove every symptom of the disorder which was laid to the charge of intestinal parasites.

The abuse of calomel and other mercurials, has been a source of incalculable injury to thousands of children. When we reflect that this poisonous drug has, more than any other, a tendency to dissolve the blood, and bring on a general prostration of strength—that it totally ruins the digestion, and weakens the nerves to such a degree as to cause a convulsive trembling of the hands and feet, a want of memory, and incurable hypochondria—and if we further take into consideration that even now, many parents have recourse to it as to a universal remedy, we may well ask whether the good it produces in competent hands, can

in any way be compared to the evils engendered by its abuse.

Narcotics require serious consideration at every age, but are more particularly dangerous for infants and children, as they so easily provoke congestions to the brain, the consequences of which (convulsions and hydrocephalus) are *always* so much to be apprehended that one of the chief objects of a rational management, during the early period of life, is to remove, as much as possible, all causes by which they might be determined. Narcotics also suppress the evacuations, whose regularity is so important to the health of children, and their repeated use is known to produce a lasting debility, and even disorganisation of the nervous system. It is in consequence of these effects that all conscientious practitioners are uncommonly careful how they prescribe narcotic medicines for children, having recourse to them in case of imminent necessity only, and hence we may infer how dangerous such weapons must be when ignorance ventures to wield them. The ravages which opiates commit among children in manufacturing towns, to whom

they are frequently given for the purpose of keeping them *quiet*, while their mothers are at work, are indeed frightful to contemplate, and loudly call for the intervention of the legislature.

Although we live in the nineteenth century, which professes to be more enlightened than all its predecessors, the sale of quack medicines is unfortunately as flourishing as ever, for there are still numbers of people who put their faith in pills and tinctures of universal efficacy, as if even one and the same disease did not frequently require a totally opposite treatment, according to its various stages, and to its difference of character in different individuals. Thus a remedy which does good in one case of scarlet fever, for instance, will be highly detrimental in another; and although excellent, if prescribed to-day, may be a perfect poison to-morrow.

But the dupes of quackery take no notice of the perpetual modifications of disease demanding as constant changes in the treatment, and requiring all the vigilance of art to meet them; in their opinion the *name* of an illness

is all that is necessary to be known, and against this the same battery must, on all occasions, be directed.

The conséquences are evident, and we sincerely hope that none of our readers will, on the recommendation of nurses or mendacious advertisements, ever think of giving quack medicines to their children, the more so as the most violent and dangerous substances are generally made to enter into their composition.

NOTE.—While writing the above, we find in "*The Globe*," Monday, December 19, 1853, the following notice, which we copy for the edification of the partisans of self-doctoring, calomel, and quack medicines :—

"*Death of a Lady from Eating Lozenges.*—On Saturday, Mr. Carter held an inquest at the Carpenters' Arms, Walcot Square, Lambeth, on the body of Miss E. Goodman, aged forty-six, a lady of property, residing at 17, Pleasant Place. On Wednesday three weeks, deceased sent her sister to Mr. Ball, a chemist, 77, St. George's Road, for six worm lozenges

for which she paid three half-pence. She took one a night for four nights in succession, and about three days after, her tongue and gums became dreadfully swollen. Medical aid was procured, and medicines were administered, but she died on Tuesday last. Dr. Humble, who attended the deceased, said the lozenges were composed of calomel, and that the deceased had died from mercurial poison. If there was one thing more dangerous than another, it was taking calomel in the shape of a lozenge. A verdict of 'Accidental Poisoning' was recorded."

CHAPTER X.

THE DISEASES OF INFANCY AND CHILDHOOD.

THE great mortality among infants and children—for one-half of the human race is swept away before the completion of the seventh year—is principally owing to their physical education being neglected, but partly also to the delicacy of their constitution, which renders them liable to be deranged by slight causes that do not affect the more robust frame of adults. For the same reason, their diseases have generally a much more rapid course, and may soon swell from insignificant beginnings to dangerous proportions, unless speedy measures are taken to arrest their progress. Thus, it is extremely important that all those who have children under their care, should have some knowledge of the illnesses and indispositions to which the first periods of life are more particularly subject. To render our

little treatise as complete and useful as possible, we will now, therefore, briefly point out to our readers, not how they may encroach on the physician's province, the dangers of which we have already shewn, but when it will be their duty to call in assistance without delay: and, at the same time, inform them of the measures they should take, either before medical aid can be procured, or in those slight cases where it is not considered necessary.

CONVULSIONS.—HYDROCEPHALUS.

In infancy and childhood the brain is large, in proportion to the rest of the body, and its growth and development more active than that of any other organ. At the same time its texture is extremely soft and delicate, and while its irritability is great, its energy is but small. Nor must we forget that its sympathies with all other parts of the body are so intimate, that no derangement can possibly take place in the digestive or respiratory functions, without being immediately reflected

on the brain. For all these reasons, this organ is very liable to diseases, both of a nervous and congestive character, to *convulsions*, and to *inflammation* or *water in the head*.

Convulsions most readily occur during the first three or four years of life, and gradually diminish in frequency, as the nervous system acquires a greater degree of firmness.

Sometimes they attack without any warning symptoms ; the infant, from being seemingly in the most perfect health, suddenly becomes livid ; his features are distorted ; his eyes are turned upwards or roll wildly about ; he loses his consciousness ; his head is thrown backward ; his hands are firmly clenched ; his limbs are alternately stiff and thrown into violent agitations.

Much more frequently, however, convulsions are preceded by signs of nervous irritability, unusual ill humour, fretfulness, sleeplessness, crying and screaming, seemingly without a cause ; frequent and sudden changes of countenance ; anxious and irregular breathing ; suddenly letting-go the breast ; distortion of the eyes ; alternate widening and contracting

of the pupils ; trembling and spasmodic twitchings of the lips, and every now and then a convulsive movement of the limbs, while sleeping, clenching of the thumbs, &c.

Frequently, also, they are announced or accompanied by the symptoms of some other disorder which gives rise to them, such as heat and redness of the gums from teething: vomiting, colic pains, flatulence, and diarrhoea, from acidity and indigestion.

All stimulants acting directly on the brain, such as narcotics, sleeping-drops or potions, a decoction of poppy-capsules; the heat of the sun falling on the uncovered head; or violent affections of the mind, fright, anger, fear, jealousy, may cause convulsions. Great pain sometimes calls them forth in an instant. They may also arise from a cold, the suppression of an eruption, or morbid secretion. Weaning and teething are dangerous periods, particularly if faults in the diet are at the same time committed, such as over-feeding with thick pap.

Convulsions are well known to be a most formidable malady; it is therefore highly im-

portant that, as soon as the above-mentioned premonitory nervous symptoms make their appearance in any notable degree, medical assistance should instantly be applied for. We must, however, warn against taking alarm too soon; for *inward fits*, as they are called, are a frequent cause of groundless apprehension. When the infant is otherwise well, its breathing regular and without effort, its head cool, its digestion undisturbed, its stools regular—then its little mouth being from time to time drawn into a smile, which is generally in its sleep, need not be magnified into a sign of approaching convulsions, as it merely results from a little acid on the stomach,* too inconsiderable to produce pain and uneasiness.

We must always bear in mind, that in all cases of convulsions (except when they are the consequence of hæmorrhage and extreme exhaustion) there is always a preternatural determination of blood to the head, and that one of the main objects of their treatment is to prevent or subdue this tendency to cerebral congestion. Thus, before the physician's arrival, the first thing to be done, is instantly

to apply cold water to the head, and put the lower part of the body into a warm bath; or wrap the legs and feet in a piece of thick flannel, dipped in hot water and wrung out, and covering it with a dry blanket.

All tight clothing must be immediately removed, and the upper part of the body raised, so as to allow the blood to return freely to the heart. The greatest quiet must be observed. A glaring light, an unnecessary noise, a number of useless attendants, rendering the air of the apartment close, can only have the effect of augmenting the child's irritability and rendering the paroxysms more frequent and intense. He must also be removed from the fire, and carried into a cool, airy chamber; and when the weather is mild, the windows should be thrown open.

As convulsions are so frequently caused by disorders of the bowels, acidity, or the retention of indigestible and acrid matters, and purgation is moreover useful in withdrawing the humours from the brain, a good dose of rhubarb and magnesia will always be of service. A simple lavement of pure water, or of barley-

water, with the addition of some salt and a table spoonful of syrup or sweet-oil, has often succeeded in speedily removing convulsions.

When they occur a short time after food has been taken, and the stomach is *evidently* overloaded, an emetic is no doubt the best remedy. One or two tea-spoonfuls, according to the age of the child, of a mixture composed of syrup of ipecacuanha one ounce, and powder of ipecacuanha ten grains, may in this case be administered every ten minutes, until it produces the desired effect. The feet, abdomen, and back must be gently rubbed with flannel, but all stimulants are cautiously to be avoided.

As for the prevention of convulsions, we can point out no better way than following the advice we have given throughout this work. If the child's nerves are steeled by cold washing, pure air, and exercise—if his skin is kept constantly clean, and care is taken not to overload his stomach, and to give him only such food as he can easily digest; he will, in all probability, never be attacked with convulsions.

Hydrocephalus, or *water on the brain*, is either chronic or acute. The former is generally congenital, the child being born with a considerable enlargement of the head, and symptoms of mental and sensorial apathy and paralysis, which, gradually increasing, set all remedies at defiance. *

The latter, which more particularly engages our attention, is one of the most formidable foes of infancy and childhood, as it is almost always fatal when its first symptoms have been overlooked, and these are of a very deceitful and insidious nature. In the first stage of the malady, a remarkable change takes place in the disposition of the little patient: he becomes peevish, fretful, drowsy, and does not play with his usual liveliness and alacrity. He *cannot hold his head upright*; and if he was already able to walk, he now falls on making the attempt, or *walks with difficulty*, lifting up his feet very high, and easily stumbling. He complains of *head-ache*, or, if too young to speak, moans and lays his hand on the painful part. Every quick motion confuses or stuns him immediately. His *head is*

hot; his face red, and often changing colour. He frequently starts in his sleep, and utters from time to time a sharp and peculiar cry. The *eyes* are *injected* and *unable to bear the light*. Want of appetite, nausea, *vomiting*, obstinate constipation, a considerable dryness of the skin, a sparing and troubled urine, as if mixed with milk; an intermittence of the pulse, and little or no fever, are also characteristic of beginning hydrocephalus. Whenever these warning symptoms, which are often attributed to worms, make their appearance, no time is to be lost; for if energetic means be not speedily employed, there is every reason to fear that a longer delay will render them completely useless.

As the disease gains ground, the signs of cerebral irritation become more and more distinct; the vomiting more constant, the headache more excruciating, the aversion to light and noise greater, the weakness of the limbs more considerable. Spasmodic squinting takes place, and elder children become delirious.

Then gradually follow symptoms of a still

more alarming nature, indicating that effusion of serum or water is actually taking place, and that the vital powers are giving way; lethargic sopor, paralysis of the limbs, dilatation of the pupils, eyes half open and insensible to light, laborious breathing, convulsions.

This dreadful malady seldom appears before the sixth month, and is of most frequent occurrence between the second and eighth year.

Children with a strongly-developed scull, a projecting forehead, and deeply seated eyes, are predisposed to it. Their intellect is frequently precocious, and a premature application to study increases their liability to hydrocephalus by producing a nervous tension or irritability of the brain, which is itself but little removed from actual disease. Among the most frequent causes of hydrocephalus, we must also mention—falls and blows on the head; the exposing it to excessive degrees of heat or cold, such as sleeping against a hot fire, and going uncovered in the sun, or bare-headed in cold weather; the abuse of spirituous liquors

and narcotics, teething, scrofula, the repelling of eruptions, particularly on the head, and the stopping of habitual discharges from the ear.

Acute hydrocephalus is unfortunately more common now than it used to be,—which is principally owing to the absurd custom of overworking the brain, and giving children too much food of a stimulating nature.

Too warm a covering is undoubtedly injurious: but to allow an infant, without a hair on its head, to go completely bare-headed in a variable climate, is surely falling into the opposite extreme.

The best medical treatment of hydrocephalus—which we refrain from describing, as surely no parent will ever attempt to cure a disease like this—will fail of its effect, unless it is strictly seconded by the greatest quiet, freedom from all excitement and disturbance, and a cool regimen in every respect.

CROUP.

In infancy and childhood the respiratory organs are extremely delicate and irritable,

and being, moreover, frequently exposed to considerable changes of temperature, they are consequently very liable to be disordered. A great source of danger lies also in the extreme narrowness of the larynx or wind-pipe, and the tendency of its inflammation to form plastic or membranous exsudations, whereby suffocation may easily be caused. It is this peculiar disposition of body which renders the *Croup* so serious a malady.

Sometimes this terror of mothers makes a sudden attack, generally in the night. The child that had gone to bed, seemingly quite well, awakes with a peculiar hoarse cough, as through a brazen trumpet, or like the distant barking of a hound, great difficulty of breathing, a laborious inspiration, a rapid change of the voice, and fever. All these symptoms abate, and rise again in paroxysms of increased violence and rapidity, until at last they become continuous, and sometimes carry off the little patient before the day is over. In other cases the *Croup* begins like a common catarrhal fever, with cold in the head, cough, *hoarseness*. The latter is

always a suspicious symptom with young children, particularly if accompanied with a rough cough. In this manner the disorder creeps on for a few days, under a gradual aggravation of its symptoms, until the child is affected in the manner above described, and after a paroxysm of an hour or longer falls again asleep. A certain time now elapses under apparently lenient symptoms (such as hoarseness, a rough cough, somewhat difficult breathing, slight fever), or even in such a state of apparent good health, as to lull the attendants into a false security. But now again a second paroxysm appears, more violent than the first, and attack following on attack, the disease progresses to its fatal termination.

The croup seldom makes its appearance before the end of the first year; it occurs most frequently between the second and seventh, and gradually diminishes until the twelfth. Scrofulous children are more liable to be affected than others. It has a predilection for damp and swampy localities, for low river-banks, bleak coasts, and the shady

side of valleys. It is produced by the same causes as a common cold or sore-throat, such as walking or running against a sharp wind, and imprudently cutting the hair short in cold weather. Although, for obvious reasons, it is more common in winter, and in wet and windy weather, it also makes its appearance in summer, particularly when children remain exposed to the cool evenings that often follow upon a sultry day.

The symptoms of a paroxysm of the croup being so alarming, it is almost superfluous to observe that medical aid should be called in without a moment's delay; for every hour adds to the danger, while an emetic given in time may succeed in removing it at once.

Before the physician's arrival, some warm elder-tea frequently given to drink, and every ten minutes a tea-spoonful of white sugar, dissolved in half the quantity of water, will be found useful palliatives. A sponge dipped in hot tea should also be held before the mouth, so as to inhale the steam, and a mustard-poultice applied for four or five minutes to the calves, until the skin gets red, or the child

complains of pain. Enemas of cold vinegar and water (one fourth of the former) do good by diminishing the fever and procuring an evacuation. Bathing the hands and arms up to the elbows in water, as warm as the child can bear it, for about ten minutes, and repeating the operation every half-hour or hour, will also be found of advantage; at the same time a towel may be thrown over the basin and head, so as to allow the vapours to be inhaled. All useless agitation and crowding about the child adds to the severity of the paroxysm.

Whenever a severe cold is attended with hoarseness and a rough cough, it is always advisable to take medical advice, as the croup may be lurking behind these symptoms.

When a child has once had the croup, it is very liable to relapses, but the following attacks are generally less dangerous than the first. It is advisable to have powders of tartar emetic in the house, which in case of the disorder recurring, are the best means for its speedy removal. The most efficacious remedy for strengthening the weakened part

is a course of sea-bathing, or a prolonged sojourn on the coast during the warm summer months.

As to the prevention of croup, daily washing the whole body with cold water, plenty of play and exercise in the open air whenever the weather is fine, avoiding piercing winds and hot rooms, never remaining out after sunset, and dressing as warmly as the season requires, but without burying the body under superfluous clothes and coverings, are the best measures to be taken.

COUGH.

A cough ought never to be neglected. When it is slight and the weather warm, the child may soon be allowed to go out as usual in the middle of the day; for prolonged staying at home frequently draws it into length, and only serves to render the respiratory organs more irritable. But when it is more violent, and particularly when attended with fever, pain, and difficulty of breathing, the patient must carefully be kept within doors, and the com-

plaint not taken lightly, as there is a danger of its becoming or being inflammatory.

A narrow-chested, scrofulous child, that frequently coughs, is undoubtedly a candidate for consumption. The proper management of these cases requires equal skill and perseverance, as the constitution must be strengthened without ever being over-exerted, and the skin and lungs fortified without imprudent exposure to considerable changes of temperature. It is of the greatest importance that the breast should be widened by exercise and a suitable course of gymnastics, so as to allow the lungs more room for growth and action. Reading loud, slowly, and distinctly, at first half an hour, and progressively an hour daily, will be found an excellent means for strengthening the organs of respiration. If possible, the Winter should be spent in a mild climate; the Summer on the sea-coast. Cod-fish oil should be given.

THE HOOPING COUGH.

The hooping cough, another great enemy of childhood, generally begins like a common

cold, and gradually, after a week or a fortnight, assumes its peculiar character. It occurs in paroxysms consisting of violent, rapidly-repeated, and imperfect efforts of expiration, alternating with long inspirations, accompanied with a peculiar whoop, from which the disease has derived its name.

During the paroxysm, but very little air is admitted into the lungs, the air-vessels and bronchi being spasmodically closed. Signs of suffocation are consequently produced; the face becomes dark red, the eyes are injected, and project from their cavities; the child in his distress, lays hold of what is nearest, in order to support himself. A paroxysm generally lasts from one to ten minutes, and frequently ends with vomiting. If it was very severe, the patient feels extremely fatigued after it, complains of pain in the breast, trembles convulsively, and finally falls asleep from exhaustion: more frequently however, he soon forgets his sufferings, and returns to his play as if nothing had happened. These paroxysms sometimes return every quarter of an hour; in other cases, their number is confined to

three or four daily. They are either spontaneous or provoked by emotions of the mind, bodily exertions, cold, dust, and smoke.

After a fortnight or three weeks, the nervous stage of the hooping cough generally begins to abate in violence; the paroxysms become less frequent, the cough, gradually loses its convulsive character, and at the end of two or three months from the beginning of the disease, its last traces disappear.

But the termination and course of the hooping cough are not always so favorable, and it becomes fatal, either by suffocation during a paroxysm, or by a complication with dangerous diseases, such as hydrocephalus and inflammation of the lungs, or by eventually causing pulmonary consumption and wasting.

Pneumonia and bronchitis are to be feared when the cough becomes short, dry, painful, and at the same time loses its characteristic whoop; when breathing grows more difficult and accelerated in the intervals which had hitherto been free, and fever begins to declare itself. An affection of the brain is to be apprehended when the children get fretful and

uneasy, often raise their hand to the head, and complain of pain on its being moved or raised: in short, when any of the previously described premonitory symptoms of convulsions or hydrocephalus begin to show themselves.

The hooping cough is a contagious malady, occurs most frequently before the seventh year, and befalls only once, though very often for months, or even years after its attack, any great emotion, fatiguing exercise, or a cold, may bring forth paroxysms of cough, with the characteristic sound.

An affection so distressing and dangerous from its immediate and subsequent effects, should never be left without medical treatment; for although science does not possess any sure remedy for suddenly arresting its course, it is at least able to render great services by mitigating its violence, and obviating disastrous complications.

The efforts of art must be supported by preventing all causes which easily bring on a paroxysm—such as screaming, crying, anger, strong exercise, running, and by keeping the air as pure as possible, free from all dust and

smoke. As soon as a paroxysm occurs, the child must be raised and supported. Some drops of cold water, thrown into the face are sometimes found to shorten the duration of a fit. The inhalation (several times daily) of warm and emollient vapours is also of use.

Cold washing, and exercise in the open air, must be persisted in during the whole course of the hooping cough, except for the first week or fortnight, while it is still in the catarrhal stage, or in case inflammatory or cerebral complications should ensue. A change of air often does more good than anything else. Even the removal from the lower part of the house to a more airy story has been found to shorten its duration. When the malady begins to decrease, warm salt-water bathing, or sea-bathing, are excellent remedies for hastening the cure.

DIGESTIVE DISTURBANCES OF INFANTS.

Symptoms of indigestion and acidity on the stomach (sour eructations, green, sour, and

curdled stools, flatulency and griping, fretfulness and crying by fits, drawing in the legs and kicking them out again) are of frequent occurrence in infancy, and generally result from *unhealthy breast-milk* and *over-feeding*. The only way to prevent them is to remove their causes by strictly conforming to the rules that have been pointed out in the chapter on diet. The best and safest remedies for affording immediate and palliative relief are rhubarb and magnesia,* and in case of constipation a tea-spoonful of castor-oil or a lavement.

Against flatulency, a tea-spoonful of simple syrup of aniseseed may be given.

* In the following form :—

Take of Powdered Rhubarb, half a drachm,
Magnesia, two scruples,
Tincture of Rhubarb, one drachm,
Powdered Valerian Root, one scruple,
Simple Syrup, three drachms,
Peppermint Water, sufficient to make three oz.
Mix.

Of this mixture a tea-spoonful or dessert-spoonful, according to the age of the child, may occasionally be given.

● When there is flatulency, colic, and constipation, a simple lavement of lukewarm water (100 degrees), with a little syrup, often affords immediate relief.

The hiccough is very common during the first months of life. A little acidity or flatulence on the stomach, a slight cold, and sucking or swallowing too greedily, very easily produce this symptom, which soon disappears by gently rubbing the stomach and giving the infant a few spoonfuls of camomile-tea. However, its frequent occurrence indicates a weak state of the digestive organs, requiring great attention to be paid to the diet.

Robust infants frequently vomit almost after every meal, without their health being in the least disturbed; their stomach having sufficient power to cast off any superfluous load, and thus to prevent indigestion. Greater moderation in suckling is all that is necessary to prevent its recurrence, but whenever habitual vomiting is attended with other disturbances of the digestive functions, loss of appetite, fretfulness, and growing weakness of the child, the case is serious, and requires to be submitted to medical inspection.

Diarrhœa in infants and children is frequently a salutary effort of Nature to relieve the economy, and must not be stopped

too abruptly. As long as it is moderate in degree, or the stools are found mixed with undigested remnants of food, and the child preserves its usual cheerfulness, all that is necessary to be done is to attend to the diet, avoiding all aliments that would increase the diarrhoea, such as vegetables, beer, and fruit, and restricting the little patient for a day or two to the use of the mildest food, such as arrow-root, barley gruel, and rice boiled in water. When there are evident impurities, their removal should be assisted by a dose of rhubarb. The belly and feet must be kept warm. When the diarrhoea is caused by a cold, a warm bath before going to bed will be of service, and a flannel band should be worn round the abdomen.

But if, in spite of these dietary precautions, the diarrhoea begins to assume a chronic character, and evidently arises from a state of weakness and irritable laxity of the bowels, more active measures must be taken, and medical aid called in without any further delay. A mother is never justifiable in giving her child

wine or other stimulating beverages, astringents, laudanum, or syrup of poppies for diarrhoea. A decoction of salep, Sydenham's white decoction, and clysters of starch, are remedies that may safely be given.*

When diarrhoea accompanies teething, it generally has a beneficial effect, by withdrawing the blood from the head, and thus preventing more serious consequences, nor must it on any account be stopped, as long as the health and strength of the infant are not evidently affected by its frequency and copiousness.

* Take of powdered salep root, ten grains; and boil with a sufficient quantity of water, so as to be able to strain off three ounces. Add—

Simple Cinnamon Water, half an ounce,

Infusion of Rhubarb, two drachms,

White Sugar, one drachm.

Mix, and give every hour two tea-spoonfuls.

One drachm of salep root, with water twelve ounces, reduced by boiling to seven ounces, forms, when cold, a thick jelly, a tea-spoonful of which, sweetened with a little sugar, may be given every three or four hours.

Take of shavings of hartshorn, and white bread crumbs, half an ounce each. Boil in three pints of water to a pint-and-a-half; then strain, and add powdered gum-arabic, two drachms. From time to time a cup-full (Sydenham's white decoction).

CONSTIPATION.

Constipation is attended with such a host of unpleasant symptoms (want of appetite, flatulence, heaviness and determination of blood to the head, giddiness, oppression of the spirits, difficulty of breathing, palpitation of the heart,) and eventually leads to such serious consequences (dyspepsia, abdominal plethora, hæmorrhoidal affections, increasing torpidity of the bowels), that parents have every reason to take early precautions against its becoming habitual; but, unfortunately, instead of endeavouring to remove the causes which would effect a radical cure, they too often put their trust in purgative medicines, which only serve to increase the evil.

Costiveness frequently results from insufficient exercise. The alternate contractions of the abdominal muscles which take place while the body is in active motion, tend to promote regular stools by pressing upon the intestines and stimulating their activity. Thus, when a child is forced to lead a sedentary life,

the intestines remain in an habitual state of relaxation, and being deprived of the beneficial stimulus which Nature intended for them, necessarily become torpid and inactive.

Another very ordinary cause of habitual costiveness is an improper diet. Thus, heavy meal puddings and pancakes, fresh bread, nuts, too great a quantity of vegetables and potatoes, spices, tea, too small a proportion of drink comparatively to the solid food, have all a tendency to obstruct the bowels. All debilitating influences, such as lying too long in bed, too warm a clothing, the abuse of warm bathing, encourage costiveness. It is frequently brought on by the evil habit of retaining the stool too long, and disobeying the calls of Nature. The intestine being thus over-stimulated, becomes more and more torpid, and its want of tone is still further increased by the distension it undergoes.

The rational treatment of costiveness evidently requires that all the pernicious influences we have mentioned should cease to act upon the child. If instead of being condemned to a prolonged and unnatural confinement, he

is allowed to play in the open air as much as his constitution requires ; if instead of obstructing food, we give him easily-digestible and substantial aliments of a different nature (a greater proportion of meat, boiled or stewed fruits for supper), if finally, we permit no weakening and debilitating habit to be indulged in, and take care to strengthen the whole constitution by cold washing and bathing, we shall surely have every reason to expect that his bowels will be regular without the habitual aid of opening medicines.

Children should be early accustomed to relieve the bowels daily, and at a fixed hour (after breakfast), and never be kept waiting when they feel the want of going to stool. Unfortunately, this rule is frequently transgressed, particularly in schools, where children are obliged to remain in the class-room, either subject to great torment, or until the desire has fairly passed. The evil consequences of this coercion are obviously so important that they should outweigh all minor considerations, such as the interruption of a lesson. On this occasion we may be allowed

to remark that false delicacy, by violently combating the wants of Nature, is the frequent cause of many painful, or even incurable diseases. When carried to an extreme, delicacy from a virtue becomes a folly, and savouring more of a ridiculous and morbid weakness of mind, than of real refinement, should by no means be encouraged in children.

If a child is accidentally constipated, and requires immediate relief, aperients of the mildest and least irritating nature, such as manna, castor-oil, rhubarb and magnesia,* should alone be used.

* Manna is very mild in its operation, and, from its sweetness, admits of being mixed with the food; its use, however, does not agree with a weak digestion, and must be avoided where there is a tendency to flatulence and acidity. The dose is two drachms for an infant, four drachms for a child two years old, and an ounce for elder children.

Castor-oil will be best given in the following form:—Take of castor-oil, one ounce; the yolk of an egg; peppermint water, two ounces; lemon juice, one drachm; loaf sugar, two drachms; mix intimately. A dessert-spoonful or more every hour, according to the age, until it operates.

INFLAMMATION OF THE STOMACH AND BOWELS.

Acute diseases of the stomach and intestinal organs, of an inflammatory nature, show themselves by *fever* (heat, thirst, restlessness,) and a *fixed* pain in the affected part, which increases on being touched, and is attended with vomiting, diarrhoea or constipation, want of appetite, great uneasiness, prostration of strength and spirits, expression of pain and illness in the features. When a child suffers from colic pains of a nervous nature, or produced by flatulence and acidity, it will feel relieved on the abdomen being rubbed, or by being laid on its stomach; here, on the contrary, the least pressure is unbearable.

As soon as symptoms of an inflammatory character make their appearance, medical aid should instantly be called for, and in the meanwhile no medicine whatever be administered, and only the mildest drink, such as barley-water allowed, for any food or beverage that is in the least stimulant may prove absolutely fatal.

WORMS.

Although the only sure sign of the existence of worms is their actual expulsion, their presence may be suspected when the greater part of the following symptoms are found united:—sallowiness of the complexion; blue rings round the eyes, and enlarged pupils; a marked predilection for potatoes, bread, and similar mealy aliments; accumulation of mucus in the digestive tube, showing itself by a slimy covering of the tongue, a sour or foetid breath, mucous vomiting and stools, troubled and wheyish urine; colic pains, particularly when the patient is empty; irregularity of appetite, there being sometimes a loathing, and at other times a most urgent craving for food; itching in the nose; grinding of the teeth during sleep; unquiet sleep with starting and screaming; fatigue after the most trifling exertion; a short, dry cough; and a variety of other nervous symptoms.

Worms principally occur in children of a torpid, scrofulous habit, with a large abdomen, soft flesh, thick lips and nose, meagre extre-

mities, weak pulse, deficient animal warmth, cold feet and hands. They not unfrequently give rise to intestinal and nervous irritation, but their chief danger consists in leading to an abuse of purgatives, and patent worm-medicines, whose violent action is frequently productive of infinitely worse effects than were to be apprehended from the original disease; and sometimes also in causing the first stage of hydrocephalus to be mistaken for verminose symptoms, and thus inspiring a false security, where the most active measures are absolutely necessary.

Whenever worms are suspected, a rational diet will, in many cases be found sufficient to remove the symptoms which were supposed to indicate their presence. Aliments which are known to favour their production—such as too much mealy and farinaceous food, fat, butter, sugar, must of course be avoided. Onions, salt, mustard, horse-radish, cresses, and pickled walnuts, are useful adjuncts to the meals of worm-patients, which should principally consist of meat and young vegetables, particularly carrots. Children of a torpid constitution and tempera-

ment may also drink bitter beer, and be indulged with port wine every morning. If these means are found inadequate to remove the suspicious symptoms, it is always much more rational to consult a physician than to use medicines of unknown composition and violent action; or at any rate, only to employ such vermifuge remedies as cannot do much harm, even in unskilled hands; for instance, the *Artemisia Contra*, or worm-seed, in doses of half a drachm to a drachm, made into an electuary with honey, twice a day; or a small tea-spoonful of common kitchen salt taken in the morning on an empty stomach. In addition to the symptoms 'described above, and that more specially refer to the *Lumbricus*, which in general appearance resembles the earth-worm, and principally inhabits the small intestines, the *Ascaris* or maw-worm, which is like a piece of ordinary white sewing thread, not exceeding half an inch in length, and is generally confined to the straight gut, gives rise to several peculiar nervous and intestinal disturbances, and also requires a somewhat different treatment, as

it inhabits a part where local remedies may be advantageously employed.

The rectum being very sensitive, Ascarid worms cause an excessive itching at the fundament, particularly towards evening, and in bed, and not seldom a discharge of mucus from the part, a frequent desire to go to stool, or even pain of an inflammatory nature. Sometimes they give rise to nervous symptoms, resembling St. Vitus's dance. They multiply very fast, and are difficult to eradicate. Lave-ments are found to answer better than internal remedies, although the latter must not be neglected. For this purpose, an infusion of worm-wood, a solution of kitchen salt, or lime-water may be used.

FEVERS.

Whenever a child is attacked with feverish symptoms, such as—burning and dryness of the skin, particularly of the forehead, cheeks and hands, a hot breath, accelerated respiration and thirst; this state of the body always

deserves serious attention; for, although in many cases a fever is slight and ephemeral, yet there is no knowing whether it may not be the beginning of a serious illness. So much is certain, that many an acute inflammation has come to a fatal termination, merely from the first signs of fever which indicated its approach having been neglected or even provoked to greater violence by the injudicious adoption of an irritating treatment. For this reason, whenever feverish symptoms make their appearance, the only safe course to be adopted is to keep the child quietly at home, to abstain from giving it meat, beef-tea, or any stimulating beverage whatsoever; and if the disorder does not abate in a short time under the influence of a cooling diet and regimen, to call in medical aid without further delay.

SCARLET FEVER AND MEASLES.

Scarlet fever, or scarlatina, is characterized by an eruption of irregular spots of a *vivid*

red colour, not raised above the skin, and generally beginning on the face, neck, and chest, whence it gradually extends over the trunk and the upper and lower extremities.

This eruption takes place after two or three days of a *fever*, remarkable for an uncommon frequency of pulse, great heat and agitation, and a transpiration of a peculiar smell, like that which is exhaled from the dens of carnivorous animals; the fever is also attended with *sore throat*, pain in swallowing, and a lively redness of the tongue. After three or four days the eruption disappears in the same order as it broke out, the symptoms gradually diminish, and a desquamation of the cuticle takes place.

The *measles* follow a similar course. After three or four days of a *fever* attended with *soreness of the eyes, cold in the head, coughing*, and a characteristic smell, like that of freshly-plucked goose-feathers, the eruption makes its appearance under the form of small circular spots of a *deep-red colour*, at first resembling flea-bites, but afterwards increasing in size. It generally begins in the face,

and successively invades the lower parts of the body. The spots are slightly raised above the surface, and thus produce an unevenness of the skin. After a few days they disappear; all the symptoms gradually diminish; a mealy desquamation of the cuticle takes place, and in ten or eleven days the whole disease is terminated.

Benignant cases of scarlet-fever and measles—that is, where the fever is moderate—require no active medical treatment, but very great care as to regimen and diet; the patient must remain in bed, however mild the symptoms may be, for here alone he will be able to maintain the equality of temperature and the quiet which are the best and essential means for avoiding all danger.

At the same time the temperature of the room must be moderate, not exceeding 62 to 65 degrees, and the bed-coverings not too warm. The air of the apartment is to be kept as pure as possible by cautious ventilation. Cooling beverages, such as toast and water, barley water, lemonade or tamarind-whey, must be given, and no food allowed but such

as is very light and easy of digestion : barley gruel, milk-soup, boiled or roasted fruit. If the patient has no appetite, complete abstinence should be observed. The body must be kept gently open by tamarinds, manna, or castor oil, but without purging.

Mothers should never forget that a more insidious disease than the scarlet fever does not exist; for when all danger seems at an end, it may suddenly produce an effusion of water into the cavities of the brain, or some other scarce less fatal dropsical affection. On this account the diet must continue to be moderate during six weeks, reckoning from the beginning of the complaint, and great attention be paid to protect the patient against the influence of a cold and damp atmosphere, allowing him to leave the room in very mild weather only and warmly clothed. All this time his brain must not be fatigued with learning lessons.

On account of the eyes being affected in measles, the room must be darkened; they may also be washed from time to time with lukewarm milk. The intense cough frequently

degenerates into pulmonary consumption if neglected: flannel should be worn next the skin.

SMALL-POX.

This disease used to be the most dreaded of all eruptive fevers, until Jenner's glorious discovery of the preservative powers of vaccination raised a strong barrier against its ravages; but although it does not appear so frequently as formerly, still genuine small-pox occasionally presents itself.

In its *mild* and *benignant* form an eruption of minute red spots like flea bites takes place after three or four days of fever, at first on the face and neck, and in the course of the next twenty-four or forty-eight hours, spreads over the whole body.

These spots soon raise themselves above the skin, and a pimple forms in their centre. On the following day they increase in size, change into pustules filled with a transparent fluid, become depressed or hollowed in the centre,

and surrounded with a red and swollen halo; at the end of the sixth day the suppurative stage of the malady begins; the pustules become opaque and distended with purulent matter, they lose their central depression; the skin, particularly of the face and hands, swells considerably; and the fever which had ceased after the eruption had taken place, reappears with greater violence.

The white colour of the pocks now gradually turns yellow, and on the eighth or ninth day changes into brown; at this time also the itching becomes more intense. Towards the eleventh day the pustules of the face begin to break, discharging a mild purulent fluid, and thick scabs form on the surface, which fall off on the fourteenth or fifteenth day, while those on the hands having come out later, commonly continue a short time longer. In the meantime the swelling and fever have gradually disappeared, and the patient is restored to health; but in many cases the progress of the disease is far from being so favourable, and death or an incurable infirmity ensues, either from the malignant

nature of the fever, the inflammation of an important organ, or one of the numerous disorders which small-pox leaves behind as traces of its devastating passage.

Benignant small-pox, like benignant scarlatina and measles, requires no active medical treatment, and merely demands a cool and sparing regimen and diet.

Thus, in winter, the temperature of the well-ventilated room should not be raised above 63 degrees; the bed coverings must be light; and in warm weather the windows may remain open the whole day. During the first days the patient need not be confined to his bed. A daily change of linen and bed-clothes will be very salutary. Cooling beverages, lemonade, toast and water, must be given, and animal food altogether abstained from until the disease is going off. From time to time when the discharge of pus is considerable, it should be gently wiped off with a sponge dipped in warm milk, which will afford the patient great relief; and to expedite the removal of the scabs, they may be wetted with oil of almonds, yolk of egg, or

cream. It is necessary that the hands should be muffled, to prevent the patient from scratching and disfiguring his face. In all cases the hair should be cut closely, which keeps the head cool, allows a greater cleanliness to be observed, and procures the advantage of being able to apply cold fomentations or evaporating lotions in case of necessity.

In the good olden time thousands of children fell victims to hot rooms, warm beds, and heating cordials and diaphoretics, which were given them to bring out the eruption, but in reality increased the violence of the fever, until the great Sydenham (born 1624, died 1689) declared war against this universal prejudice, and introduced the more rational cooling treatment, which by moderating the fever, greatly diminished the danger of the complaint. Although the cow-pox almost invariably affords a complete protection against the attacks of small-pox, still this disease now and then occurs in children that have been duly vaccinated; but even here this preservative proves extremely beneficial by impressing a favourable modification on the character of

the disease. Thus, in these cases the eruption takes place sooner ; the pustules are generally far less numerous, and develope themselves more rapidly, either dying away at once, or drying up without breaking, on the fifth or sixth day after their appearance. The suppurative fever does not take place, and the face is not swollen. The same diet and regimen is to be observed as in the genuine small-pox.

VACCINATION.

It is important that the progress of genuine cow-pox should be known, to distinguish it from that which is spurious, and consequently affords no protection.

Until the end of the third day after vaccination no change takes place, or some redness is alone observable ; but now a light-red, slightly raised spot, makes its appearance, and one can distinctly feel a hardness on the edge of the small cicatrice made by the lancet.

On the fifth day the spot, becomes more

elevated and circular ; the redness round the cicatrice increases : itching, and sometimes a slight fever takes place.

On the sixth day : formation of a pearl-coloured pustule, with an elevated border, and a dell or hollow in the centre, containing a clear watery fluid, and surrounded by a red ring half a line in diameter.

On the seventh and eighth day the pustule grows in width, and acquires a diameter of two, sometimes even of four, lines ; it retains the central dell, and is surrounded by a red ring several lines in diameter. Sometimes on the eighth, but more generally on the ninth day, the fluid begins to turn thick, yellowish, and purulent, and an inflammatory redness makes its appearance, extending to several inches, but occasioning more itching than pain.

On the tenth day the pustule loses its dell, and resembles a large lentil with abrupt edges.

On the eighth, ninth, and tenth day, slight feverish symptoms generally take place.

On the twelfth the peripheric redness diminishes ; the pustule assumes a pale-yel-

lowish appearance, and a small crust forms in the centre.

On the thirteenth and fourteenth day the crust covers the whole pustule, turns of a brown mahogany colour, blackens on the following days, and generally falls off between the sixteenth and twenty-fifth day, leaving a white, circular, depressed, ribbed, net-like and furrowed cicatrix behind.

In spurious cow-pox the pustule is completely formed on the third or fourth day; has no depression in the centre: the secondary peripheral inflammatory redness does not take place; its form is not so regular, and the crust appears as early as the sixth or seventh day.

The constitutional symptoms occasioned by vaccination are generally very slight. Care must be taken to avoid a cold and damp air; to keep the bowels open, if necessary, with castor-oil, and to protect the pustules from injury. Should the arm become inflamed and swell, pieces of linen wetted with Goulard's water must be applied. The cow-pox affording such efficient protection against one of the severest contagious disorders, it is a duty every

parent owes to his family and society in general, to have his children vaccinated, and the public has a right to demand that it should be rendered compulsory.

CHICKEN-POX, NETTLE-RASH, THRUSH, CHRONIC ERUPTIONS.

Besides the dangerous eruptions we have noticed above, and whose management, however benignant they may appear, requires the greatest care and attention for many weeks, infants and children are subject to a variety of acute affections of the skin, which are in general of a more innocuous character.

In the chicken-pox the body has the appearance of having been exposed to a shower of boiling-water, each drop of which had occasioned a small blister. The vesicles, after standing for two or three days, shrivel and fall off, leaving here and there a superficial mark. Several crops appear in succession, and the whole disease is generally terminated in

a week. The constitutional derangement is very slight. A cool diet and regimen must be observed. The chicken-pox is very contagious, so that precautions must be taken against its infecting other children.

The name of the nettle-rash expresses the character of the eruption, which consists of patches or wheals of irregular shape and a pale colour, raised above the skin and encircled with a more deeply coloured halo. The excessive itching is best alleviated by a warm bath. Sometimes in consequence of an idiosyncrasy or peculiarity of constitution, the eating of strawberries, oysters, crabs, lobsters, occasions an eruption of nettle-rash, or a fiery redness over great part of the skin. In general Nature relieves the economy of the pernicious substance by vomiting or diarrhoea; should this not be the case, an emetic or some slight aperient may be given.

Acute eruptions of infants, such as the red-gum, the tooth-rash, the nettle-rash, are frequently connected with acidity or a disordered digestion, for which some rhubarb and magnesia is the best remedy.

As danger may result from their being driven in, cold-washing must be suspended for a few days.

The *thrush*, or sore mouth—a very common complaint among young infants—consists in an eruption of small white spots like coagulated milk, covering the tongue, lips, and inside of the mouth. It is attended with pain, difficulty of sucking or swallowing, vomiting, diarrhoea, and fever. Attention to the principal causes, such as: a bad quality of the milk, and its turning sour in the mouth when the infant is allowed to fall asleep at the breast; want of cleanliness, or impure air; is the best preservative against this troublesome affection. Particular regard to cleanliness, and to all other rules of physical education, will also be found the best means to prevent the chronic eruptions of the skin, to which scrofulous and neglected children are so frequently exposed. Repelling them by topical applications may have the most dangerous consequences; and for this reason no mother should ever attempt to use salves, lotions or powders of any description which have not been expressly re-

commended to her by a conscientious and competent adviser.

SCROFULA AND RICKETS.

Scrofula and rickets are nearly related; and being principally caused by a faulty physical education, may consequently be best prevented by a rational one. It is important that their first signs should be well understood, as they are frequently overlooked, and the difficulty of the cure naturally increases with the progress of the evil.

Children with a scrofulous habit, have a delicate and thin skin, and frequently a bloated face, a thick upper-lip and swollen nose. Their flesh is soft and relaxed, their abdomen enlarged; they are deficient in animal warmth, and often complain of cold hands and feet. Their appetite is very irregular, sometimes failing, and then again voracious, particularly for mealy vegetables, potatoes and bread.

• They are very subject to obstinate catarrhal affections, to swellings of the glands, particularly of the neck, to crusty eruptions in diffe-

rent parts of the body, to inflammations of the eyes and eyelids, and to running of the ears. All these are manifest tokens of a bad composition of the humours, and of a weakness of the solid parts, and it is this disposition of body which gives so serious a character to any local affection that may befall them, as hence the restorative or healing powers of Nature are weakened in their very sources. Such children are also the chief candidates of pulmonary consumption.

The first symptoms of *rickets*, which are now generally considered as a variety of scrofula, are:—an uncommonly large head, with a projecting forehead, swelling of the joints, particularly of the articulations of the hands, so as to make them appear knotty; learning very late to walk, or inability to do so; bending of the legs, and the above-mentioned signs of general debility. As the disease progresses, the softening of the bones may lead to the most hideous deformities.

Scrofula and rickets are often hereditary, but more frequently they are occasioned by a bad diet, impure air, uncleanness, and

want of exercise. They delight in damp and low situations, in dwellings which the sunbeam never visits, in narrow and crowded lanes. Their very essence being weakness, it is evident that their cure must chiefly be sought for in the salutary agency of those influences by which the constitution is fundamentally strengthened. These, we hope, to have already sufficiently impressed upon our readers' minds, and it would be useless to recapitulate them; but, as children with a scrofulous or ricketty habit, are the victims of actual disease, their physical treatment requires a more than ordinary care, and particular precautions, to which we think it necessary to direct attention. A damp and cold atmosphere is found to be very unpropitious for scrofulous children. Thus, if circumstances do not allow them to spend the winter in a more genial climate, care should at least be taken to keep them as much as possible under the influence of a moderately warm and dry air. A damp, small, dark, and ill-ventilated bed-room is particularly injurious, as so many hours are, spent within

its walls. The corrupted atmosphere of towns causes many scrofulous children to perish who might have been saved by being brought up in the country.

A very liberal allowance of exercise in the open air is absolutely necessary, nor should scrofulous children on any account be kept sitting so many hours over their lessons—for strengthening the constitution is here a question of paramount importance, the only means to prevent the certainty of future misery, and should therefore outweigh every other consideration. Well will it be for them, if they are able to spend the summer near the sea-side, and play on the beach the greater part of the day, under the influence of the purest air and the enlivening sunbeam.

Great attention must be paid to the exercise of scrofulous children, not fatiguing or over-heating them, for every exertion which is too much for their strength is sure to have a weakening effect. In this, as in all other respects, the success of their treatment entirely depends on the avoiding of extremes.

Excessive exercise, too long a walk, for

instance, or too rough and violent play, has not only an injurious effect upon their whole body, but may also lead to the most serious local consequences, by causing

Inflammation of the Hip-joint,

a disease which, if neglected in the beginning, is almost sure to lead to incurable lameness, so that its timely discovery is of the highest importance. The first circumstance indicating its appearance is a *sympathetic lameness*, and *pain in the knee* of the diseased side, which frequently diverts the attention from the true seat of the evil. The knee is also bent, and the heel scarce rests upon the ground. A weakness is at the same time felt in the limb, and its motions are executed with difficulty. It appears longer than the other, and bending it towards the abdomen occasions considerable pain. In rotating the joint much pain is also occasioned in consequence of its stiffened state.

We should be led beyond our limits, were we to relate the further course of this disease when left to itself, and shall therefore termi-

nate our remarks on the subject by observing that a recumbent posture and absolute rest of the limb being the necessary auxiliaries of a cure, which, if not successful in a few weeks, will not succeed at all; the danger of overlooking the symptoms we have pointed out is very great indeed. *

Scrofulous children require an active transpiration, and particular care must be taken to strengthen and regulate the functions of their skin. Without this, all other means for destroying the germs of disease will be of no avail. They should therefore be well washed or bathed every morning in cold water, and this may be continued even during the winter in a warmed room. It is necessary that the operation should be rapidly performed, and a soft flesh-brush used immediately after drying, by which a favourable reaction will be promoted. At the same time the child should be well, though not too warmly clothed, and never exposed to great changes of temperature, for which purpose flannel worn next to the skin will be of great use. The evening air and bleak winds must be as carefully

avoided as the opposite extremes of overheated rooms and too warm a covering during the night.

The diet of scrofulous children requires the most careful regulation, and the weakness of their digestive powers ought never to be lost sight of. They should on no account be allowed to overload the stomach with fresh bread, potatoes, and heavy puddings and pancakes. Animal food being most nutritious and easy of digestion, is more conducive to their health than vegetable aliments, and ought therefore to be allowed in a greater proportion. To render digestion easier, it is essential that their meals should be taken in smaller quantities, and often, rather than in larger portions, and less frequently. Good bitter beer is a suitable beverage for scrofulous children, and some wine should be allowed them daily, particularly when they are of a sluggish and torpid nature.

The same attention as to air, cleanliness and nourishment, will be found the best means for arresting the progress of rickets. With regard to exercise, however, the softened state

of the bones must here be taken into consideration. Thus, if children disposed to rickets have not yet learned to walk or stand, their attempts must not be encouraged, until they have acquired greater strength. In fine weather they should be carried out as much as possible into the fields, and left to play upon the hay or dry grass as long as the sun shines. If on the sea-coast, nothing can be better for them than to remain for hours on the warm beach. Pumping cold water over their legs twice a day, and washing and rubbing them with sea-water will be found useful.

Cod-fish oil is an excellent remedy for scrofula, possessing both medical and nutritious properties, and may in every case be tried without danger, beginning with a few teaspoonfuls, and gradually augmenting, according to the age of the child, to three or four table-spoonfuls daily. Should its use be found to disorder the stomach, it must be discontinued.

In Germany an infusion of roasted acorns (half an ounce to an ounce each time), taken like tea or coffee, with milk and sugar, is fre-

quently given as a breakfast to scrofulous and ricketty children. Acorns contain a large proportion of fecula and a bitter principle; they are both nutritious and strengthening, and the small quantity of empyreumatic oil developed by the roasting, renders them easily digestible.

Among the numerous evils to which scrofulous and ricketty children are particularly subject, *a deviation of the spine* is certainly not ~~one of the~~ least, for it not only condemns ~~the body~~ to perpetual infirmity, but also casts a dark shade over the mind, souring the character and poisoning the sources of happiness. This misfortune is sometimes occasioned in the healthiest constitutions by mechanical injuries, but much more frequently it originates in a weakness and relaxation of the muscles and ligaments which support the spine. For where do we most commonly find this deformity? Surely not among strong and healthy children, whose very liveliness and exuberance of spirits exposes them to perpetual falls and blows, but among the delicate victims of a faulty physical education, unable from very weakness to

hold themselves straight. Debility being thus the chief root and origin of spinal deformity, the best means for its prevention is undoubtedly to fortify the constitution; but the back, besides suffering from general weakness, is also liable to be injured by influences which more immediately tend to deform the spine, and among these: keeping the body too long in the same position, deserves particular notice.

When day after day, a child is obliged to remain sitting for hours together, while its instinct prompts it to strengthen all its muscles alternately, by an ever-changing variety of motions, we surely cannot wonder at Nature resenting so gross an infraction of her laws. It is impossible that the muscles which serve to keep the body upright, can long remain in a state of active exertion, without feeling lassitude and fatigue, particularly when the energies of the muscular system are constitutionally weak. Under these circumstances, the necessary consequence of prolonged sitting is that the back gives way, and stoops or leans on one side, seeking in passive relaxation the rest which its failing powers absolutely

require. But when this crooked position is habitually indulged in, organic malformation and a gradual displacement of the vertebræ very easily ensue. Thus weak and scrofulous children should never be allowed to sit for any length of time in the same position, particularly not towards evening, when the muscles of the back are already fatigued by the exertions they have undergone during the day. Very young children, whose weakness of constitution particularly exposes them to curvature of the vertebral column, should always be carried about on the back, and not on one side, as this may become dangerous through the lateral compression of the thorax. Care must be taken not to let them sit upon the arm, as long as their spine is seen to bend under the weight of the body.

The position of the child while sleeping must also be well attended to. His mattress must be hard, for a soft bed easily forms a hollow under the weight of the body, nor should the upper part be raised too high, a small pillow for the head to rest upon is sufficient.

When a child has had a severe fall, his back, for some days after, must be repeatedly rubbed

with camphorated spirits of wine, in order to strengthen the ligaments which the commotion may have weakened.

As incipient deformity is easily cured, while in a more advanced stage it frequently bids defiance to the most rational treatment, it is a very useful precaution to examine the child's back from time to time, which will enable one to detect the first appearances of malformation. This is particularly advisable after a severe illness, or when growth is rapid.

Should signs of incipient curvature show themselves, untiring attention and perseverance will be necessary to obviate the danger. Every rule for strengthening the back, must, of course, be more strictly observed than ever, and no influence tolerated which might in the least augment its weakness. It must be washed every morning and evening with cold water, and immediately afterwards rubbed with some aromatic spirits, at the same time stroking it straight downwards, by applying the thumbs on both sides of the spine.

A lukewarm salt-water bath, every other day, will be of great service, and still better

the sea-bath, whenever the strength and age of the child permit its use. Three or four times a day, he should, for a few minutes, remain suspended by the hands from a sling or a rope, with a transversal piece of wood at the extremity. This is a very simple and excellent remedy ; for the weight of the body straightens the spine, and the vertebral column being stretched, the muscles of the back are, at the same time, awakened to greater activity.

Mechanical means should only be employed when the evil has attained more serious proportions, and never be used without proper medical advice: they must on no account interfere with the freedom of exercise.

When the shoulder grows out in consequence of curvature of the spine, pressure upon the projecting part is a ridiculous and hurtful practice, as it evidently leaves the real cause untouched, and injures health by hindering respiration. A course of gymnastics judiciously employed, so as gradually to bring the spine into its natural position, by restoring the disturbed equilibrium of its muscles, cannot fail

to do good in all cases, and is indispensable in many.

ACCIDENTS.

Blows, falls, bruises, and burns, are among the most ordinary incidents of childhood; nor can it be otherwise, where so much activity and liveliness coincides with so little reflection. Fortunately, the bones being softer and more pliable than at a later period of life, the body less heavy, the limbs more elastic, and the restorative powers in their full energy, the falls and bruises of children are in general not attended with the serious consequences they otherwise would have produced. Nor must we forget that Providence has kindly given them a mother's eye to watch over their movements.

After a severe fall or blow on the back, it is advisable to have the spine attentively examined, to see whether it be not painful in any part, as neglect may give rise to future deformity.

After a fall or violent blow on the head, the patient is not safe from secondary inflammation for several weeks after the accident has taken place. For this reason particular attention must be paid to avoid all influences that tend to heat or excite the brain, such as close attention to study, stimulating food, rough play, and constipation. Many a child has died in consequence of these precautions having been neglected.

The best and universal remedy for wounds, bruises and contusions, is, immediately to apply cold water to the part for a quarter of an hour or longer, renewing the compresses as soon as they get warm.

This prevents inflammation, pain, swelling, and extravasation, and is of the greatest use, even in those severer cases which require surgical skill.

For slight scalds and burns that are not attended with loss of the outer skin or cuticle, it is also nothing better than keeping the part in the coldest water that can be procured, until the pain has ceased. The formation of vesicles or blisters will be best prevented by

these simple means; should this however not be the case, they must at all events not be opened. If the cuticle has been detached, the wound must immediately be covered with some mild and unctuous substance, so as to keep off the air and prevent irritation. White of egg and sweet oil, or a liniment composed of lime-water, two ounces; oil of olives, one ounce; and tincture of opium, one scruple, are good remedies for this purpose.

In severer scalds and burns, linen or cloth adhering to the sore must remain untouched, and great care be taken not to detach the cuticle or break the blisters.

The application of ice to the head for an hour or two, is the most effectual remedy for the intolerable pain attending upon a severe burn. The ice is to be removed a few minutes after the pain has ceased. Never venture to administer laudanum without medical advice.

